ATHLETIC TRAINING PRECEPTOR FEEDBACK EFFECTS ON ATHLETIC TRAINING STUDENT INTRINSIC MOTIVATION

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ATHLETIC TRAINING PRECEPTOR FEEDBACK EFFECTS ATHLETIC TRAINING STUDENT INTRINSIC MOTIVATION (152 pp.)

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This study aimed to identify athletic training student intrinsic motivation, with subscales of interest/enjoyment, perceived competence, effort/importance, pressure/tension, perceived choice, value/usefulness, and relatedness, based on the intrinsic motivation inventory (IMI). It also evaluated the effects of feedback as facilitators and barriers to intrinsic motivation in clinical education. Athletic training student feedback was obtained by asking open-ended journaling questions related to how their preceptor interacted with them and provided feedback in their clinical rotation. A mixed-methods approach was utilized for this study.

There was a significant difference in pre-post IMI scores in subscales of interest/enjoyment, perceived choice, and value/usefulness. Qualitatively, athletic training students identified active communication, autonomous practice, theory to practice, culture and setting, and nature of feedback as key facilitators to motivation from preceptor feedback. Athletic training students identified key barriers to intrinsic motivation as excessive downtime at clinical sites, extrinsic factors, placement alignment, preceptor stress, and stagnant environment.

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To myself, you did it. Congratulations on not giving up on yourself and finishing!

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CHAPTER I

INTRODUCTION

Problem of Practice

Athletic training is a healthcare profession established in 1950 that has evolved both didactically and clinically (Weidner & Henning, 2002). Although accreditation agencies have varied over time, currently athletic training programs are expected to maintain accreditation through the Commission on Accreditation of Athletic Training Education (CAATE, 2023). "The CAATE is a 501(c) non-profit organization serving the public and profession by establishing and ensuring compliance with accreditation standards that facilitate quality outcomes, continuous quality improvement, innovation, and diversity to enhance athletic training education" (CAATE, 2023, p. 1). The degree requirements changed to an entry-level graduate degree from an entry-level bachelor degree in 2022 to bring athletic training greater recognition as a healthcare profession in the public eye and alignment with other healthcare professionals (McKeon et al., 2017). Competency-based medical professions such as athletic training, nursing, occupational therapy, physician assistant, and physical therapy require clinical education as part of their educational training (Edler et al., 2017). As such, athletic training programs are required to meet all CAATE standards (CAATE, 2020) including clinical education standards.

Athletic training clinical education can be described as the portion of the athletic training student's (ATS) professional preparation that involves the formal acquisition, practice, and evaluation of clinical proficiencies through a variety of settings such as the classroom, laboratory, and clinical experiences (Edler et al., 2017). Clinical education is intended to provide students ample opportunities to apply athletic training skills to the patients with whom they interact in their clinical setting (Aronson et al., 2015). Through these skill applications and

interactions within the clinical environment, ATS are engaging with clinical preceptors who support and guide their clinical engagement.

The objectives of clinical education are to create an environment where students apply the skills and behaviors of the athletic trainer while developing socialization skills to facilitate transition into professional roles and responsibilities (Aronson et al., 2015). During the clinical component, ATS are provided clinical practice opportunities with varied client/preceptor/patient populations (CAATE, 2022). Given the importance of clinical education, an awareness of and appreciation for the background, history, and future directions of clinical education are valuable for clinicians and educators alike (Weider & Henning, 2002). It is important to understand the impact clinical education and preceptor feedback have on athletic training students in their clinical sites. Preceptors are an integral piece of clinical education as they provide supervision, guidance, learning experiences, and facilitation of the socialization and development of the preceptee into a competent professional (Bartlett et al., 2020). Preceptors interacting with students in their clinical education and providing feedback can have an impact on the ATS intrinsic motivation.

Preceptorship may be defined as the formal arrangement, situated within a clinically related setting, between a practicing health professional; preceptor, and student; the preceptee (Bartlett et al., 2020). Preceptor and preceptee relationships can be an asset to student education and play a pivotal role in the development of the preceptee. The preceptor acts as a role model. In athletic training education, preceptors are athletic trainers or physicians who facilitate students' clinical abilities in alignment with CAATE curricular standards (CAATE, 2022). In order to qualify as a preceptor, preceptor training is required. This training is set forth by the athletic training program and addresses the program's mission, vision, and standards. This aims

to ensure that the preceptor understands programmatic expectations to maximize student learning during the clinical experience.

Preceptor training has been mandatory since the 2012 CAATE standard (Standard 41, CAATE) on preceptor training emerged: “Preceptors should receive planned and ongoing education from the program designed to promote a constructive learning environment.” Despite this requirement, there are still gaps in the delivery of effective preceptor training programs and their impact on preceptor behavior. Many athletic trainers involved in clinical education started without any formal training in preceptor education. Further, preceptors were typically chosen because of their clinical experience and expertise, having little formal training in education (Hankemeier et al., 2017). Preceptors were often considered due to the clinical site location rather than their willingness to serve as an important piece of the clinical education process for the ATS. Since preceptors are expected to teach the athletic training students they supervise, evaluate each student’s knowledge and clinical skills, and foster their development during patient care, formal training in educational best practices help facilitate effective communication, enhance the clinical engagement, and drive student intrinsic motivation (Hankemeier et al., 2017).

To fill this gap in effective preceptor training and actual preceptor behaviors, mandated preceptor training continues to evolve as part of athletic training education (Eiroa & Konin, 2021). The athletic training program is responsible for having a documented plan for ongoing preceptor training (CAATE, 2022). Both new and experienced preceptors attend preceptor training, and the content should focus on specific programmatic goals and objectives for clinical education relevant to preceptors of all levels of experience (Volberding & Richardson, 2015). Further, professional education programs through the National Athletic Trainers’ Association

(NATA) such as the Master Preceptor courses have emerged to expand preceptor training at a more global level.

Preceptors teach and evaluate students during clinical experiences using real-time patient encounters. As such, communication is important between preceptor and student. Dialogue between preceptors and students should consist of interaction and feedback about tasks performed in the clinical setting. Preceptors facilitate the student's transition from understanding content to practicing patient care skills in the clinical setting. Feedback can be verbal or written. Both are intended to provide constructive evaluation of student skills and behaviors to enhance intrinsic motivation to continue to learn in the clinical environment.

Athletic training students obtain feedback from their preceptors about the tasks they are completing such as clinical evaluation or practicing skills. Feedback and dialogue in the clinical setting are designed to help the ATS develop professionally. The relationship and dialogue between preceptor and student should allow the opportunity for the student to ask questions to obtain critical information about skills being performed. Quality feedback provides information to students about their performances that they can use to improve and refine their clinical skills, reasoning, and professional behaviors (Nottingham & Henning, 2014a). Effective feedback can have an impact on students' motivation at their clinical education site by reinforcing good practice, promoting self-reflection, and motivating the learner to work towards their desired outcome (Burgess et al., 2020). Through this process, intrinsic motivation of the student can be enhanced. "The practices of teachers can influence students' autonomy and competence and thereby their motivation" (Torbergsen et al., 2023, p. 1). Effective communication with students about various points of view may boost intrinsic motivation and aid in learning outcomes (Torbergsen et al, 2023).

Feedback provides critical guidance for the student. Nursing and health education literature identify key elements for effective feedback which include: the promotion of self-evaluation skills, clarification of good performance related to expected standards, formation of action plans and goals for further skills achievement, promotion of teacher and peer dialogue around learning, and motivation for students to promote self-confidence and clinical competence through correction or reinforcement of clinical practice (Allen & Molloy, 2017). Preceptors and their involvement with their students not only involve feedback to students but also provide a mentorship for the student as a role model. This interaction could have an impact on the ATS's intrinsic motivation in their clinical education.

In addition to providing feedback, the preceptor also serves as a role model for the student. Direct role modeling and positive interactions help promote confidence and readiness to transition to autonomous practitioners (Bowman et al., 2017). Through this role modeling, mentoring relationships are forged. Faculty, preceptors, and students acknowledge the importance of mentoring relationships during clinical education as a mechanism for fostering transition to clinical practice (Bowman et al., 2017).

With preceptors serving as role models, students are learning to formulate a professional identity. Providing athletic training students opportunities to engage in their projected professional roles during clinical education involves increasing levels of clinical responsibility with appropriate preceptor support and supervision. This incremental and facilitative process allows students to gain confidence in their identities as athletic trainers and allows them to gain professional motivation (Mazerolle & Dodge, 2015). Therefore, the importance of establishing a solid mentoring relationship where progressive autonomy and effective feedback are provided cannot be underestimated.

Since preceptors play an integral role in the educational process, it is considered prudent to understand the conflicting responsibilities of a clinical preceptor. These challenges can impact their behaviors when serving as a programmatic preceptor. Preceptors have busy schedules and work obligations to maintain high-quality patient care, and the responsibilities of serving as a preceptor can be overwhelming (Hankemeier et al., 2017). These dual responsibilities often conflict and preceptors are forced to prioritize one aspect of their role over another. This could be one reason some athletic trainers may be hesitant to be a preceptor. Preceptors have described challenges with fitting time into their schedules and opportunities to teach with other administrative and clinical responsibilities (Williams et al., 2021). With the additional requirement for formal preceptor training, many preceptors are hesitant to participate and if they do, find themselves struggling to balance their conflicting roles (Eiroa & Konin, 2021).

Since preceptors are role models and facilitate motivation, formal training in feedback strategies should be considered an essential element of preceptor training. Developing goals, providing feedback, and helping students build confidence are all integral components of clinical practice for athletic training (Hankemeier et al., 2017). Preceptors in clinical settings are expected to work with students on creating goals for the semester, providing feedback to help to attain those goals, and challenging them while also supporting the student. The preceptor also helps the student to progress in their educational journey while giving feedback on progress. This is important at all stages of the ATS progression toward independent practice as an autonomous practitioner. When a student is under direct observation, feedback has been shown to provide the greatest impact on the student's behavior (Burgess et al., 2020). Clinical education experiences and the preceptors who facilitate them can have a significant impact on an athletic training student's career decisions and desire to persist in the athletic training profession (Hankemeier et

al., 2017). In order to best serve each individual student, the preceptor is encouraged to reflect on their mentorship style, take time to teach and provide feedback to the athletic training student, and exhibit a positive attitude (Mazerolle & Dodge, 2015).

Understanding intrinsic motivation during clinical education experiences can provide insights into what factors motivate students. Effective and regular feedback reinforces good practice, promotes self-reflection, and motivates the learner to work towards their desired outcome (Burgess et al., 2020). Intrinsic motivation can be described as "autonomous self-regulation/motivation" and extrinsic motivation as "controlled self-regulation/motivation" (Moll-Khosrawi et al., 2021). By understanding the integrated and complex nature of intrinsic motivation related to preceptor feedback, athletic trainers can better serve students.

One of the many different formal tools to measure intrinsic motivation is the Intrinsic Motivation Inventory (IMI). The IMI (Ryan & Deci, 2000b) evaluates the sub-scales of intrinsic motivation related to interest/enjoyment, perceived competence, effort/importance, pressure/tension, perceived choice, value/usefulness, and relatedness of an experience (Ryan & Deci, 2000a). Since limited information exists in athletic training literature on intrinsic motivation and how athletic training students capitalize on it to learn and grow, considering this tool as a viable resource for uncovering intrinsic motivation factors seems reasonable. Coupling this inventory with a qualitative perspective on facilitators and barriers related to preceptor feedback and ATS intrinsic motivation can provide valuable insight to athletic training programs.

Purpose

The purpose of this study was to evaluate ATS intrinsic motivation and if there was a change in the intrinsic motivation after preceptor feedback training was implemented. Further,

ATS perceptions of preceptor feedback as facilitators or barriers for intrinsic motivation were also studied.

Theoretical Framework

Preceptors within an athletic training program are important assets. They are responsible for providing feedback to ATS during their clinical education experiences, which has been described as one of the most important characteristics of clinical instruction in athletic training, medicine, nursing, and physical therapy (Nottingham & Henning, 2014a). The ability of preceptors to provide useful feedback to the student could affect the student's progression through their clinical education program and their intrinsic motivation. Two theories provide a sound foundation. Self-Determination Theory (SDT; Ryan & Deci, 2017) and Optimizing Performance Through Intrinsic Motivation and Attention for Learning (OPTIMAL) Theory both lend insights into student intrinsic motivation and the impact of preceptor feedback. SDT when combined with the IMI (Ryan & Deci, 2000b) and paired with OPTIMAL Theory can provide an understanding of intrinsic motivation for students in their clinical setting.

SDT reflects the construct of a person making their own decisions regarding their life and how it is managed. Originally coined by Deci and Ryan (2000b), SDT is specific and relates to the intrinsic motivation of a person. It can be utilized to help better understand how students make decisions and why. This theory is driven by motivation and is based on the fact we are in control of our own lives, and choices, and can meet our potential (Drew, 2020) through these choices. This theory is founded on six stages of motivation (Drew, 2020):

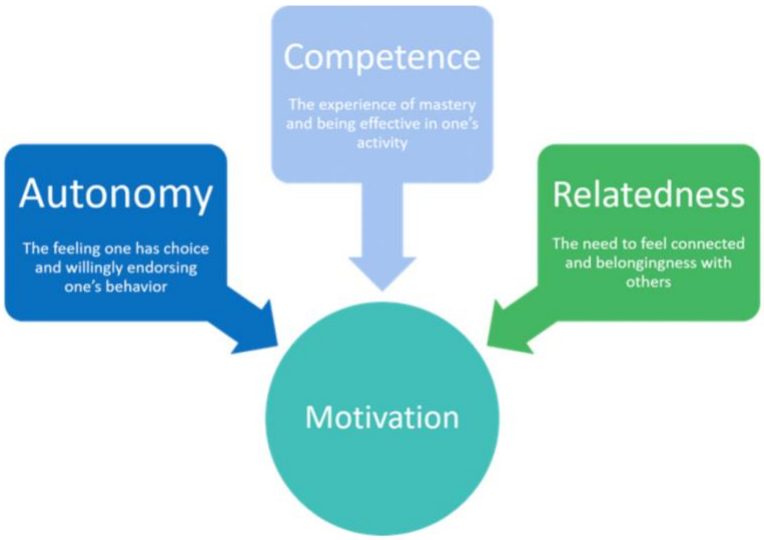
- Non-regulation: You do not attempt to do a task as you have no motivation.
- External regulation: You do a task for a reward or punishment.
- Introjected regulation: You do a task because it boosts your ego.

- Identified regulation: You do a task because it makes you feel better.
- Integrated regulation: You do a task because you believe it's right to do.
- Intrinsic regulation: You do a task for the personal satisfaction of doing it.

Two assumptions are inherent in SDT: (a) all humans desire growth and (b) all humans can achieve intrinsic motivation because it comes from within (Deci & Ryan, 2000a). These assumptions can be used to better understand what elements intrinsically motivate students. Figure 1 (Ryan & Deci, 2000a) shows each.

Figure 1

Self-Determination Theory Components



Through a theoretical lens using SDT, we can understand what motivates students in their clinical education rotation. Ryan and Deci (2000a) created the foundation to help understand motivation and what drives student intrinsic motivation. Autonomy is the feeling one has choice and is willing to understand one's behavior, competence is the experience of mastery and being effective in one's activity, and relatedness is the need to feel connected and belongingness with

others (Ryan & Deci, 2000a, n.p.). Understanding how ATS perceives autonomy can be impactful to clinical education for students.

Another similar theoretical perspective that relates to student intrinsic motivation approaches this construct from an athletic coaching/performance lens. OPTIMAL Theory has relevance in the development of motor skills characteristic of clinical education which may drive intrinsic motivation. Important factors included in this model are *enhanced expectations* for performance (positive experiences or outcomes), performer *autonomy,* and an *external focus on attention* (Lewthwaite & Wulf, 2017). OPTIMAL Theory can be utilized to understand how students comprehend and master their clinical skills during their clinical experience. Enhanced expectations, autonomy support, and specific focus are thought to optimize skills acquisition and performance through their effects on learning, memory, and brain structural and functional connectivity (Lewthwaite & Wulf, 2017). Athletic training students optimize skills in the clinical setting by practicing skills learned in the didactic setting and applying them to the clinical setting and patient care. Athletic training preceptors often use a variety of teaching strategies with their students in the clinical setting, including hands-on activities and asking a variety of clinical questions (Hankemeier et al., 2017) to allow the students to critique and improve their skills. Further, they use varied feedback mechanisms that can also be integrated into this model.

ATS intrinsic motivation is an important aspect to understand since feedback practices have been linked to student success. Multiple researchers articulate that student motivation is a key component to students completing their athletic training degree and pursuing a certification in athletic training (Dodge et al., 2009; Mazerolle et al., 2013; Peer & McClendon, 2002).

Understanding what motivates an ATS can be an important element and should be considered for the future of athletic training clinical education.

Preceptors are important to clinical education. Preceptors need formal training in effective communication to foster effective mentoring relationships. The relationship between student and preceptor could be a key aspect of students' intrinsic motivation. In a study by Allen and Molloy (2017), positive clinical education culture, positive attitude toward student learning needs, and most important, the development of good student-preceptor relationships, were important in students' learning. Feedback is essential for the student's growth, provides direction, helps to boost confidence, and increases motivation and self-esteem (Clynes & Raftery, 2008). Grounded in SDT and OPTIMAL theories, student intrinsic motivation is dependent upon their perception of their abilities to complete essential tasks in clinical education. Preceptor feedback plays an integral role in this process.

Research Questions

To better identify student intrinsic motivation and the impact of preceptor feedback, the following research questions were utilized in this study:

1. Is there a significant difference in AT student intrinsic motivation subscale scores as measured by the IMI following preceptor feedback training intervention?
    a. Is there a significant difference in ATS internal motivation scores as measured by the IMI following preceptor feedback training on the Interest/Enjoyment subscale?
    b. Is there a significant difference in ATS internal motivation scores as measured by the IMI following preceptor feedback training on Perceived Competence?

c. Is there a significant difference in ATS internal motivation scores as measured by the IMI following preceptor feedback training on the Effort/Importance?
d. Is there a significant difference in ATS internal motivation scores as measured by the IMI following preceptor feedback training on the Pressure/Tension?
e. Is there a significant difference in ATS internal motivation scores as measured by the IMI following preceptor feedback training on the Perceived Choice?
f. Is there a significant difference in ATS internal motivation scores as measured by the IMI following preceptor feedback training on the Value/Usefulness?
g. Is there a significant difference in ATS internal motivation scores as measured by the IMI following preceptor feedback training on the Relatedness?

2. How do ATS perceive preceptor feedback following the preceptor training feedback intervention?
    a. What did ATS perceive to be the facilitators and barriers to intrinsic motivation as reflected in preceptor feedback?
    b. What preceptor feedback practices were perceived to negatively influence ATS intrinsic motivation?

Summary

As educators in athletic training education, understanding intrinsic motivation and its impact on students during their clinical rotation is prudent. For this research study, the goal was to understand students' intrinsic motivation during their clinical rotation and whether their preceptor feedback before and after formal training had an impact on that intrinsic motivation. With a focus on the student intrinsic motivation and understanding facilitators and barriers to intrinsic motivation, athletic training programs can better facilitate clinical experiences that

foster strong mentoring relationships. Better understanding of preceptor feedback and its impact on student intrinsic motivation can guide strategies for clinical education preceptor training. These, in combination, can ultimately facilitate an effective transition to practice.

Definition of Terms

Athletic training education: Programs that serve as gatekeepers to professional practice in athletic training (Dodge et al., 2009, p. 197).

Athletic training student: Students who are in didactic and clinical athletic training education, admitted from the university into the program.

Clinical education: A component of healthcare education by which students acquire, practice, and demonstrate competency in clinical proficiencies through classroom, laboratory, and clinical experiences (Edler et al., 2017).

Feedback: Any information provided to a student that helps correct, reinforce, or suggest change in his or her performance (Nottingham & Henning, 2014a).

Intrinsic motivation: Involves engaging in learning opportunities because they are seen as enjoyable, interesting, or relevant to meeting one's core psychological needs (Augustyniak et al., 2016).

Intrinsic motivation inventory (IMI): Multidimensional measurement device intended to assess participants' subjective experience related to target activity in laboratory experiments (Ryan & Deci, 2000b).

OPTIMAL theory: Factors include *enhanced expectations* for performance (positive experiences or outcomes), performer *autonomy*, and an *external focus on attention* (Lewthwaite & Wulf, 2017).

Preceptor: Individuals who teach and evaluate students during clinical experiences with real-time patient encounters, play a vital role in the overall quality of the clinical education experience for athletic training students through clinical supervision, mentorship, and evaluation (Neil et al., 2019).

Self-determination theory (SDT): Claims three basic psychological needs that have to be satisfied to achieve intrinsic motivation and internalization of autonomous self-regulation (Orsini et al., 2015).

CHAPTER II

LITERATURE REVIEW

As athletic training education continues to evolve, understanding the importance of preceptor feedback on ATS intrinsic motivation should be explored. Preceptor mentorship and interaction with ATS can be impactful for the educational progression of that ATS. Exploring how the feedback from preceptors impacts the intrinsic motivation of an ATS along with facilitators and barriers to intrinsic motivation can help to better understand what drives an ATS through their clinical education and eventual transition to practice.

Because preceptor feedback to students is complex and several components play a role in student motivation, understanding the relationship between feedback and intrinsic motivation can aid in creating a stronger learning environment where the student grows and excels. The focus of this review of literature develops these main elements to provide a foundation for the study and to establish the state of the literature on these factors. Reviewing the literature explores to understand student motivation and the role of preceptor feedback.

Literature Search Strategies

Research articles were identified using Kent State University's search database, EBSCO. Terms searched within the database were student intrinsic motivation, motivation in healthcare, preceptor feedback, preceptor feedback in healthcare, Intrinsic Motivation Inventory, Self-Determination Theory, OPTIMAL Theory, and athletic training history. The *Journal of Athletic Training* and *Athletic Training Educators' Journal* were utilized as relevant journals for athletic training literature. Articles in the English language that were peer-reviewed were essential criteria for this study. Due to the limited research on preceptor feedback in the athletic

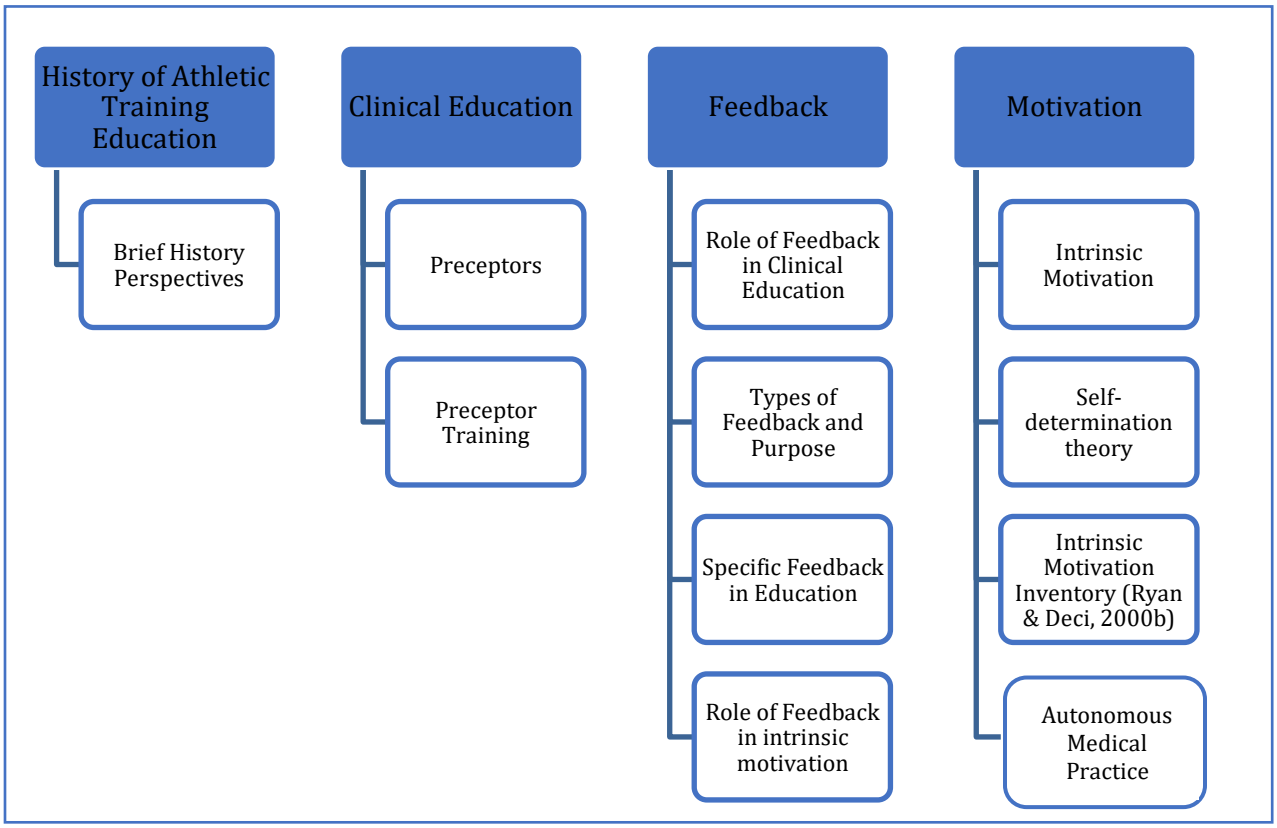
training literature, seminal articles were used despite their range outside of the preferred previous 10 years.

Objectives

The objective of this review of literature is to present literature relative to understanding several factors related to preceptor feedback and the impact on ATS intrinsic motivation. The main objectives that were explored are the history of athletic training education, clinical education, feedback, and motivation (see Figure 2). Within each objective, there are components that were investigated further to obtain a better knowledge of the impact that they have on ATS intrinsic motivation.

Figure 2

Objectives for Review of Literature



History of Athletic Training Education

The history of athletic training education has been evolving since the founding of the National Athletic Trainers' Association (NATA) which began in 1950. Athletic training historians indicate that athletic training curriculum development began in the 1950s and 1960s; however athletic training clinical education more formally began taking shape in the 1970s (Weidner & Henning, 2002). The first athletic training programs incorporated internship models which required an abundance of clinical hours with little classroom preparation (Delforge & Behnke, 1999). In the late 1990s, a more focused approach to clinical education began, replacing the more random or chance learning experiences of apprenticeships or internships with a preceptor or supervisor (Weidner & Henning, 2002). The first development of standards was developed by the Joint Review Committee on Educational Program in Athletic Training and the NATA (Diakogeorgiou et al., 2021). These curriculum models evolved into more classroom involvement and fewer clinical contact hours (Delforge & Behnke, 1999).

The curriculum models began to change whereas the

> Joint Review Committee on Educational Programs in Athletic Training became independent from the Commission on Accreditation of Allied Health Programs and became the accreditation agency now known as CAATE, which is an accrediting agency by the Council of Higher Education Accreditation in June 2006. (Diakogeorgiou et al., 2021, p. 312)

This was an important change to athletic training as it was removed from kinesiology and was now housed under education (Diakogeorgiou et al., 2021). The change from kinesiology to education also allowed for athletic training programs to align with other healthcare programs

(Diakogeorgiou et al., 2021). This change was crucial as it allowed for the profession to grow and begin to change even more to what it is today.

The next major change within athletic training clinical education was the change to the entry-level master's degree. "In May 2015, the CAATE, with the support of other members of the Strategic Alliance, announced that the required degree from professional education and eligibility for the BOC examination would change to the master's degree level" (Diakogeorgiou et al., 2021, p. 312). This change no longer allowed ATS to obtain their master's degree in athletic training. The last students permitted to apply and graduate from an accredited baccalaureate program were in 2022 (Diakogeorgiou et al., 2021). The change from a bachelor's degree to a master's degree was a pivotal part of the history and future of the athletic training profession.

Beginning in the fall of 2022, athletic training education transitioned from an entry-level bachelor's degree to an accredited master's level AT (MSAT) program (Elies et al., 2022). This transition was implemented to align with other healthcare professionals, such as physician assistants, occupational therapy, physical therapy, and nursing (Elies et al., 2022). This change also decreased the time that students are learning the didactic material from four years to two years. MSAT programs now require two years of intense coursework in the field of athletic training (Elies et al., 2022). The difference between the four-year degree and the newly created two-year degree is the time and intensity that the student must learn and master their didactic and clinical information. This new curriculum model also requires a rotation that fully immerses them in educational materials and practices to prepare them for a future in the athletic training profession (Elies et al., 2022). Since they cannot attend as many clinical rotations, this does not give the student as much time to connect the didactic and clinical education material thereby

implying that effective clinical education is imperative. Preceptor feedback is an important piece to ensure that students are progressing according to the CAATE standards in their clinical education.

The foundation of athletic training education is taking didactic knowledge and using it effectively in the clinical setting. Ideal learning environments should allow the student to apply concepts learned in the didactic setting to the clinical setting (Nwizu et al., 2023). Clinical sites are venues where students can apply their didactic knowledge into clinical skills. Experiential learning is also known as a "rotation" where students have opportunities for interaction with a variety of clinical experiences (Nwizu et al., 2023). Preceptors in clinical rotations give students opportunities to apply the didactic education under their clinical supervision. Preceptors should understand the program's requirements before having a student at their site (Nwizu et al., 2023). They have an incredible amount of influence on their ATS and are highly involved in mentoring (Mazerolle & Dodge, 2015). A preceptor should also be involved in giving feedback and being a positive mentor to their student as it can play an important role in the progression of the ATS in their education.

Clinical Education

Athletic training clinical education has many components that are impactful to the program and student development. Clinical education in the athletic training profession has been identified as vital to student retention and persistence and impacts their learning and development (Radtke, 2017). CAATE, like other health profession regulators, has limited restrictions on how a program must deliver clinical education (Edler et al., 2017). Clinical education consists of a variety of different settings and includes diverse patient interactions. Across health professions, clinical education is included to promote student learning through

patient contact (Welch Bacon et al., 2022). In athletic training, clinical experiences have been identified as opportunities for students to have realistic and meaningful opportunities to apply the knowledge and skills they have acquired in the classroom (Welch Bacon et al., 2022).

In 2020, CAATE incorporated specific clinical education standards that programs must abide by and follow. These standards (CAATE, 2020) are as follows:

- *Standard 16:* The clinical education component includes at least one athletic training immersive clinical experience.
- *Standard 17:* A program's clinical education component includes clinical practice opportunities with varied client/patient populations. Populations must include clients/patients:
    - throughout the lifespan (for example, pediatric, adult, elderly),
    - of different sexes, with different socioeconomic statuses,
    - of varying levels of activity and athletic ability (for example competitive and recreational, individual and team activities, high and low-intensity activities,
    - who participate in non-sport activities (for example, participants in military, industrial, occupational, leisure activities, performing arts).

Clinical education gives students the autonomy to work independently under the supervision of a clinical preceptor. Professional master's degree programs identified clinical education as a strength due to the variety of sites they have available and the ability for students to apply didactic knowledge to reinforce learning (Bowman et al., 2017). This is a key component to not only help the ATS to be prepared but also facilitate a means of mentorship between preceptor and ATS.

The ability for students to interact with preceptors during their clinical rotation has been shown to have a positive impact on their future as ATS and entering the profession. Dodge and Mazerolle (2015) found that “athletic training students have identified that interactions with preceptors who display excitement for their roles as health care providers provide them with additional validation of the dynamic and exciting nature of the athletic training field” (p. 22). The impact of clinical education and preceptors has shown to be beneficial to the development of athletic training students.

Transition to Practice and Clinical Education

Transition to Practice (TTP) is defined as “the psychological process that occurs as individuals progress from students to clinicians” (Kilbourne et al., 2021, p. 508). This process is an important part of clinical education as it challenges the student to transition to a certified athletic trainer where they are on their own. No length of time is considered the appropriate time for this transition to take place. The average process can take anywhere from 6–12 months and requires individuals to make the psychological changes necessary to complete these behavioral changes (Kilbourne et al., 2021). The ability of a student to understand how to make these psychological changes quickly can impact their future as an athletic trainer (Kilbourne et al., 2021).

TTP is a piece of clinical education that is important for the student. With the release of the 2020 standards and specific emphasis on TTP, Berry (2021) believed athletic training education programs must prepare all graduates to be competent, compassionate, patient-centered, professional athletic trainers ready to be integral members of healthcare teams at multiple levels. TTP as a newly certified healthcare provider has been considered *shock of clinical practice* because of the transition from ATS to a professional athletic trainer (Walker et al., 2019). It can

be stressful for the student as they are transitioning from a student to a professional where they are no longer under the supervision of a preceptor. Students are expected to take their didactic knowledge and apply it in the clinical setting to prepare them for the transition to practice in the athletic training profession. Mentorship between the preceptor and student is impactful for the student and their TTP.

It is unclear how models of clinical education affect TTP, patient care, communication, clinical decision-making, and time management (Edler et al., 2017). The benefit of clinical education is that students will be prepared and understand what the workforce will look like when they graduate and work professionally on their own (Eldred et al., 2021). By allowing students to have the opportunity to practice their skills and refine them daily, TTP issues may diminish as students will be confident in their ability to complete that skill. Self-reflection also allows students to identify weaknesses so they may become life-long learners (Eldred et al., 2021).

Understanding the impact that clinical education has on an ATS is a crucial piece to aid in the TTP and the development of students into professionals. Preceptors interface many challenges that may relate to the TTP of ATS. Educators "have a responsibility to prepare new employees entering the workforce with knowledge of what to expect during the transition in clinical practice and strategies to assist them during this time" (Walker et al., 2019, p. 1206). By identifying ways to help students with TTP, the preceptors can make the transition to the workforce easier and less stressful for the ATS.

Preceptors

A preceptor's responsibility is to enhance and provide current knowledge to ATS and help them be prepared to transition from an ATS to a successful practitioner (Eiroa & Konin,

2021). Preceptors should be up to date with the current literature and be able to communicate with the ATS and challenge them daily to bridge the gap between didactic and clinical education. Within clinical education, preceptors are valuable educators at clinical sites who interact with students to help apply the didactic skills learned in the classroom. A preceptor is expected to set the best example possible to enhance and provide the current knowledge possible for a successful transition from being a student to a practitioner (Eiroa & Konin, 2021). Preceptors are selected based on standards implemented by the CAATE (2020). According to the CAATE Standard 45 (CAATE, 2020, n.p.), preceptors are healthcare providers whose experience and qualifications include the following:

- Licensure as a health care provider, credentialed by the state in which they practice (where regulated)
- BOC certification in good standing and state credentialed (in states with regulation) for preceptors who are solely credentialed as athletic trainers
- NPI number with appropriate health care field designation
- Planned and ongoing education for their role as a preceptor
- Contemporary expertise

Preceptors are often certified athletic trainers and are selected on certain criteria. Previously, preceptor selection was based on the level of experience that the certified athletic trainer had in the profession, with the average being two years of experience and a minimum of a bachelor's degree (Eiroa & Konin, 2021). Preceptors, before 2016, were not required to complete any courses on how to effectively be a preceptor (Eiroa & Konin, 2021). Now, preceptors must complete "effective preceptor" training annually that involves specifics incorporated by each accredited program (Eiroa & Konin, 2021), and are often chosen because of the location of the

academic program. Additionally, the training should include topics such as “how to evaluate a student’s skills” and “providing a student with critical feedback” (Eiroa & Konin, 2021). Preceptors are still expected to have the contemporary expertise that the CAATE has previously required and incorporate new strategies to deliver feedback to students.

Clinical education coordinators (CEC) should be selective as they choose preceptors who will consistently challenge students in their clinical setting. CAATE identifies CEC as a faculty member (the PD or other duly appointed faculty) who must be allowed release/reassigned workload to meet the institutional responsibilities for clinical education” (CAATE, 2023). CECs are responsible for ensuring that preceptors are meeting the criteria that need to be met by the CAATE, as well as completing preceptor training annually. The athletic training profession is similar to nursing in how they select preceptors. Some of the criteria for a preceptor to be selected are the location of the clinical site and if they want to partake in being a preceptor (Eiroa & Konin, 2021).

Preceptors are involved with students in the clinical setting and are important for playing a role in feedback and communication, amongst other important details that have an impact on the student. An athletic trainer minimally must meet the basic requirements as outlined by the CAATE standards to serve as a preceptor. However, many athletic trainers have not had a pedagogic focus during their professional or advanced educational training, which may influence their ability to instruct professional-level ATSs (Mazerolle et al., 2014). Approachability is a key skill that preceptors should encompass so that students may be willing and comfortable to come to a preceptor should an issue arise (Eiroa & Konin, 2021). Students who are not hesitant to interact and ask questions to their preceptors may be left behind and not refine the skill that is in question. Preceptors work to provide real-life experiences at the clinical education site.

Preceptors, who teach and evaluate students during clinical experiences with real-time patient encounters, play a vital role in the overall quality of the clinical education experience for athletic training students through clinical supervision, mentorship, and evaluation (Neil et al., 2019). Athletic training students value working with preceptors who demonstrate appropriate professional roles and promote a positive learning environment (Mazerolle & Dodge, 2015). Students want their preceptors to be positive and professional in their clinical rotations. They also expect their mentors to not only demonstrate a strong knowledge base and facilitate learning but also to display professionalism and exhibit and encourage positive professional perspectives (Mazerolle & Dodge, 2015). The ability of the preceptor to mentor students in their clinical setting can be important for the success of that student in their profession moving forward and should be considered when selecting preceptors in a clinical setting placement.

Preceptor Training

Within clinical education, preceptor education and training are implemented for the development of preceptors. According to the CAATE, preceptor education is designed to promote an effective learning environment and may vary based on the educational expectations of the experiences (CAATE, 2022, n.p.). Preceptor training is a requirement of the CAATE and should follow the program's mission and vision (Eiroa & Konin, 2021). The CEC should ensure that the preceptor is completing the preceptor training annually to remain compliant with new implementations from the athletic training program.

The Athletic training program must have a plan for ongoing preceptor training (CAATE, 2022, n.p.). The ability of an athletic training program to incorporate effective preceptor training and education impacts not only the clinical education site but also the student who is placed at the site. Preceptor development programs are designed specifically to prepare individual

professionals, from across health care disciplines, to assume the preceptor role for a specific program. These individuals are expected to complete numerous tasks related to a student's academic and professional development, including integrating classroom ideas and concepts into the clinical setting (Hankemeier et al., 2017). With the *Reshaping Athletic Training Education in the 21st Century* document, clinical education experiences are encouraged to provide support and preceptor development resources (NATA, 2023, n.p.).

Recommendations have been made to improve preceptor training. One model involves three steps: initial conference between the CEC and preceptor; observation of the preceptor in the clinical site; and a follow-up feedback conference (Radtke, 2017). *Reshaping Athletic Training Education in the 21st Century* is a document created by the Executive Council for Education (ECE) that created recommendations for Future Directions in Athletic Training Education (NATA, 2023, n.p.). This document was created to provide guidance in preceptor training. There were changes made for preceptors as well. These changes are (NATA, 2023, n.p.):

- Resources for faculty preparation and development should continue to be expanded upon to ensure faculty and programmatic affiliates such as preceptors are supported in their roles.
- The NATA should continue to support the preceptor development process and provide resources to athletic training programs to enhance clinical education experiences.
- CECs are responsible for ensuring that preceptors are responsible for ensuring that this plan from the NATA is being met and followed.

Several challenges are inherent in preceptor training. Although the single-meeting approach has the advantage of delivering pertinent information to all preceptors at one time and

allowing for quality discussions, it is often difficult to schedule a large group of clinicians for this meeting (Volberding & Richardson, 2015). Beyond scheduling, motivating individuals to give up personal time to attend a meeting is difficult (Volberding & Richardson, 2015). A preceptor's role has been reported as stressful because of work hours, the patient-to-health care professional ratio, and the challenge of balancing the conflicting responsibilities of clinician and educator (Mazerolle et al., 2014). Preceptors' time can be an issue for attending meetings since they are working a full-time job on top of being clinical preceptors. This could affect the preceptor's availability for a formal in-person preceptor training meeting.

Recently, the National Athletic Trainers' Association created a Regional Workshop called *Master Preceptor* (NATA, 2023) that consists of three parts. The concept behind the Master Preceptor Program is a "one-stop shop" (NATA, 2023, n.p.). Schroeder described the course by saying,

> The course starts from the very beginning and just defines what is clinical education, what is successful, quality clinical education and how do we create that environment at our clinical sites? . . . All the way through to a lot more advanced skills, like how to incorporate evidence-based practice into the clinical education experience for learners and how do you use patient outcomes to drive clinical practice? (NATA, 2023, n.p.)

This workshop was created in 2017 and has since been utilized. "Master Preceptor I" is the first workshop designed "to provide opportunities for practicing clinicians who have an interest and passion for serving as preceptors to develop and advance expertise in clinical teaching" (NATA, 2020). The second part of this workshop called "Master Preceptor II" (NATA, 2021), picks up where Master Preceptor I (NATA, 2020) leaves off and is "ready to expand on and dive deeper into the basics learned in previous modules" (NATA, 2021). Just recently, NATA launched the

third part of this program called “Master Preceptor III” (NATA, 2023). This is an advanced workshop that is designed to help “attendees to learn the skills and value of simulation to enhance their own practice as well as facilitate clinician and student learning. The focused areas of learning will be on simulation, quality improvement, challenging conversations, and various best practices of patient care” (NATA, 2023). The continued development of preceptor workshops, such as these could be impactful for the future of preceptor development and clinical education in the future.

Unlike other healthcare professions, athletic training has a set of guidelines for preceptors. The Accreditation Council for Graduate Medical Education has implemented a clinical education milestone project that highlights the importance of all components that are impactful in presenting Clinical Education Milestones (Clinician Educator Milestone Project, 2021). “Milestones are knowledge, skills, attitudes, and other attributes organized in a development framework” (Clinician Educator Milestone Project, 2021, p. 3). These milestones are synonymous from Level 1-novice to Level 5-expert (Clinician Educator Milestone Project, 2021). Programs implementing and allowing for their preceptors to work toward Level 5 expertise are important for athletic training clinical education.

Feedback

Feedback is generally understood as the numerous procedures that are used to tell a learner if a response is right or wrong (Fong et al., 2019). Feedback is described as “Specific information about the comparison between a trainee’s observed performance and a standard, given with the intent to improve the trainee’s performance” (Burgess et al., 2020, p. 1). Some of the most common are informal, formal, formative, and summative (Hardavella et al., 2017). Understanding the relationship of feedback to students in a clinical rotation is an important part

of athletic training clinical education. Fong et al. (2019) described feedback as "information provided to an external agent regarding some aspect(s) of the learner's task performance, intended to modify the learner's cognition, motivation, and/or behavior to improve performance" (p. 122). This type of interaction and feedback between the preceptor and student plays an important role in education and should be explored deeper to gain a better understanding of how it affects the student. These feedback techniques are utilized to tell students if things are going in the right direction or if redirection is required (Hardavella et al., 2017). Feedback to students and how it is being given to the student in the moment is paramount for the student and the ability of that student to correct mistakes. Hardavella et al. (2017) went on to describe feedback and how it contributes significantly to learners' competence and confidence in their professional careers; it helps them to understand gaps between performance and ways to improve these gaps.

Interaction and feedback given to students is an important aspect of athletic training clinical education (Nottingham & Henning, 2014a). According to Lefroy et al. (2015),

> Helpful feedback is a supportive conversation that clarifies the trainee's awareness of their developing competencies, enhances their self-efficacy for making progress, challenges them to set objectives for improvement, and facilitates their development of strategies to enable that improvement to occur. (p. 284)

There are effective and ineffective ways to deliver feedback. The ability to recognize and develop skills to give effective feedback to students could be an important component of clinical education. Clinical education coordinators need to educate and engage preceptors in the process of feedback and encourage them to create their best feedback practices (Burgess et al., 2020). Understanding the relationship between preceptor feedback and ATS intrinsic motivation can help to facilitate an effective clinical learning environment.

Types of Feedback and Purpose

The delivery and timing of feedback to a student are impactful and important for the preceptor to understand. The types of feedback utilized in healthcare the most are verbal and written comments in clinical evaluations. Although the most common, other elements are important while delivering feedback. Feedback specificity should vary in the clinical setting. Terms such as "good job" can be considered feedback that is lacking in detail and description (Nottingham & Henning, 2014b). The timing of the feedback is important to consider within the nature of feedback. Preceptors and ATS agreed that immediate feedback is more effective rather than delayed feedback and is more effective because of the ability to discuss and correct the issue that arose (Nottingham & Henning, 2014b). "Positive or affirmative feedback, therefore, is an acknowledgment of appropriateness and moving toward competence" (Mazerolle et al., 2016, p. 46). The nature of the feedback should also be considered in situations to help with quality care, learned behaviors, attitudes, and beliefs (Mazerolle et al., 2016). Understanding the impact that the nature of feedback has on an ATS's intrinsic motivation is important for clinical education.

Constructive feedback detailing positive and negative aspects of a student's performance can be time-consuming and difficult, but not giving feedback can have a substantial negative effect (Burgess et al., 2020). Preceptors are responsible for providing feedback to students, even when time may be limited. The most common type of feedback utilized in athletic training education is informal feedback which occurs on a day-to-day basis and typically occurs in a verbal form (Hardavella et al., 2017). Regular and effective feedback helps to reinforce good practice and, in turn, helps to motivate the learner toward the desired outcome (Burgess et al., 2020). The type of feedback in the clinical education setting should be conducted during every skill or patient encounter to provide information to the student on how they can improve on the

skill. Formal feedback comes from a more structured assessment and is also typically in verbal form (Hardavella et al., 2017). These types of assessments are completed at the end of a learned skill as an oral practical or competency.

Understanding the impact of preceptor feedback and the nature of the feedback being given can be integral to understanding how it affects the ATS's intrinsic motivation at the clinical site. Formative feedback is utilized to provide opportunities to gain feedback, reflect, and redirect effort before the final assessment (Hardavella et al., 2017). This feedback can be utilized in clinical education by providing feedback to a student after completing a patient evaluation to provide feedback before their final testing. Summative feedback measures performance and explanations for the final mark/grade received (Hardavella et al., 2017). This also is utilized in athletic training education as written or oral exams but is not utilized as much in clinical education by preceptors. No single feedback model will work across all clinical contexts (Burgess et al., 2020). A variety of feedback in relationship to ATS should be considered and utilized in athletic training education and preceptor training for clinical education.

Role of Feedback in Clinical Education

Feedback is given in numerous ways to students in their clinical rotation. Clinical feedback is the responsibility of the preceptor who is assigned to them at their clinical rotation. Providing feedback to students has been described as one of the most important characteristics of preceptors in athletic training, medicine, nursing, and physical therapy (Nottingham & Henning, 2014b). The ability of the preceptor to give feedback to the student is a critical aspect of clinical education as it creates an environment where the student may or may not feel comfortable with asking questions or asking for help with specific skills. The preceptor should always create an environment where open communication is utilized and is always non-judgmental and safe

(Eiroa & Konin, 2021). Immediate feedback should be given each time a student is practicing a skill or evaluating a patient to ensure the student is being efficient in their skill and can make modifications if needed.

The significance of feedback from a preceptor to ATS in the clinical setting is important for the progression of mastering skills. Feedback from preceptors should also give guidance to the ATS by providing ways to improve and refine their clinical skills during their clinical rotation (Nottingham & Henning, 2014b). This type of feedback helps to encourage the student by reinforcing good practice while also motivating the learner toward their goals in their clinical setting (Burgess et al., 2020). Athletic training clinical education coordinators should continue to educate preceptors about the importance of feedback in clinical education experiences (Nottingham & Henning, 2014). The preceptor should also challenge themselves to receive feedback from their student to improve their feedback skills.

Preceptors can help to improve an unhealthy situation with an ATS by reaching out to the student on ways to improve feedback and communication skills (Eiroa & Konin, 2021). This should be done by the preceptor as well as the clinical education coordinator reaching out to the preceptor throughout the semester so if issues arise, they can be addressed promptly before the situation gets worse. It is the job of the educational program and preceptor to ensure feedback is provided and to ensure students are being given the best opportunity to grow and master their skill set during clinical rotations. Clinical education has many components that are integral to the ATS's improvement of clinical skills. Preceptor training along with the ability for the preceptor to provide appropriate feedback to the ATS is significant to the progression of clinical education.

Specific Feedback in Clinical Education

When exploring feedback in clinical education, a variety of feedback deliveries are utilized from preceptors to athletic training students. As discussed previously, informal, and formal feedback should be utilized in clinical education. The importance of clinical education feedback was discussed, along with how it is integral to the process of education, and should include clinical and academic practice, professional conduct, complaints, and/or serious incidents that should be discussed in a reflective, non-judgmental manner so the student may improve and develop (Hardavella et al., 2017). The ability of the preceptor to give effective feedback to the student should be investigated to better prepare the preceptor on how to effectively communicate with their students.

Constructive feedback in clinical education is specific, objective, timely, and non-judgmental (Sarkany & Deitte, 2017). The ability of the preceptor to conduct feedback to students is a critical part of clinical education and should be considered by both the clinical education coordinator and the preceptor. "Conducting a respectful, reflective, two-way conversation in a safe environment is a key component to providing constructive feedback" (Sarkany & Deitte, 2017, p. 741). The ability of the preceptor to engage the learner and consider their improvements is a key component of constructive feedback (Weallans et al., 2022). Understanding what students' goals are clinically can help constructive criticism to be valuable because the preceptor will know what aspects to focus on to help students improve clinically. Having a conversation about feedback and giving constructive feedback can be an important aspect for preceptors and clinical educators to identify and incorporate in clinical education.

Some other feedback techniques, as discussed by Sarkany and Deitte (2017), can be valuable to consider in clinical education. The technique called the feedback sandwich is when a

negative comment is sandwiched between positive feedback (Sarkany & Deitte, 2017, p. 743). Pendelton's model provided improvement on the "feedback sandwich" by stating that the sandwich starts with a conversation, which implements a type of feedback while also integrating self-learning and improvement to students (Sarkany & Deitte, 2017, p. 743). Implementation of the feedback sandwich can be valuable because you are not just giving students negative comments, rather having a conversation about the skill and incorporating negative and improvement comments within the conversation. Athletic training clinical education should utilize feedback that is going to help improve the student. Implementing a negative comment within the positive, such as the feedback sandwich, could be valuable and not discourage the student from wanting to try the task and fail. These techniques can be considered and utilized in the clinical education setting to improve feedback to students.

Understanding and implementing a culture for effective feedback in clinical education is crucial and should be considered an integral element of clinical education. The ability of preceptors to incorporate new feedback techniques to their students can have an impact on the ATS intrinsic motivation in their clinical education. Holmboe et al. (2018) created topics to help facilitate the development of preceptor feedback by exploring four main topics. The topics incorporated into preceptor feedback development were *implementing a culture of effective feedback*, *observing before giving feedback*, *engaging and sharing feedback*, and *supporting feedback seeking* (p. 261). This was the foundation of the preceptor feedback intervention that was implemented for this study. Understanding how to give feedback to students is important for preceptors to be aware of. Holmboe et al. (2018) also provided a framework to guide the feedback process. The components of this process are (pp. 257–258) and were used to create the

preceptor training intervention. The components within the preceptor feedback training and concepts that were utilized were as follows:

1. Observing the learner, that is, collecting performance data.
2. Assessing that performance compared with a shared standard or milestone.
3. Engaging the learner in a reflective feedback conversation and in his or her performance data.
4. Activating the learner to use the data and feedback for the learner and improvement, through coaching and collaborative planning.
5. Evaluating the impact of the plan.
6. Creating a positive feedback culture.

Utilization of this framework can be valuable to athletic training programs as they can incorporate feedback techniques into their programmatic preceptor training. The preceptor training is an integral piece of athletic training clinical education as preceptors providing feedback to ATS is impactful. Preceptors being willing to apply this feedback process in clinical education with their preceptor could have an impact on the athletic training student's intrinsic motivation.

Motivation

Academic success and wellbeing are considered key aspects of academic motivation (Kotera et al., 2021). "Motivation is the reinforcement of the learner by others to enact or intimate the behavior" (Eldred et al., 2021, p. 43). Motivation is a key clinical component of education as it is what drives a student to want to continue in the athletic training profession, along with wanting to be active in their clinical education. Motivation has evolved from the Latin word *movere*, which means to move (Augustyniak et al., 2016). It has been researched in clinical

education the impact that motivation has on an ATS (Dodge et al., 2009). Motivation in clinical education can "move" by challenging students to apply what they are learning in the didactic setting to their clinical education rotation.

Two main components of motivation should be considered when discussing motivation. They are intrinsic motivation (students work to toward opportunities that are meaningful for their academic success) and extrinsic motivation (tasks are completed based on external factors) which are both are integral to the motivation of the student in their clinical education (Kotera et al., 2021). Both aspects of motivation are important to the ATS in the progress of their clinical education journey. The ability of an athletic training preceptor to encourage and keep them intrinsically motivated, confidence in the ability of perform skills and progress appropriately can be valuable for the ATS (Dodge et al., 2009). Motivation should also focus on student goals and what they are trying to achieve out of their clinical rotation.

Several factors can be considered when understanding motivation and the impact that it has on a student. There are manipulated variables in autonomy, competency, and relatedness as well as unmanipulated values in gender, age, and ethnicity, that all influence motivation, and should be considered when creating goals for students in their clinical setting (Kunanitthaworn et al., 2018). Autonomy, competency, and relatedness can be manipulated by many factors such as intrinsic and extrinsic motivation (Kunanitthaworn et al., 2018). These would be considered manipulated variables. Unmanipulated values are those such as age and gender, academic conditions, beliefs, anxiety or depression, and academic engagement (Kunanitthaworn et al., 2018). All the factors should be considered when investigating how intrinsic motivation impacts a student in their clinical education.

Autonomous motivation along with SDT may be applied by understanding students' basic psychological needs for autonomy, competence, and readiness (Kuśnierz et al., 2020). Understanding what motivates a student in their clinical education placement can be a pivotal aspect to consider when giving students autonomy. Like nursing, athletic training preceptors work alongside athletic training students daily and can have a large impact on their competence and transition to practice. They also found that nursing preceptors, because they work with students, play a pivotal role in the transition to practice. The same can be considered for athletic training students.

Intrinsic and Extrinsic Motivation

The relationship between intrinsic and extrinsic motivation has been studied previously and continues to be explored further. According to Ryan and Deci (2000b), "intrinsic motivation is defined as the doing of an activity for its inherent satisfactions rather than for some separable consequences" (p. 56). Exploring ways to understand what motivates students can be an important component of clinical education and even more importantly, for preceptors. Intrinsic motivation reflects the human ability to learn while extrinsic motivation results from external control or self-regulation (Kunanitthaworn et al., 2018). Fong et al. focused their study on intrinsic motivation and how it "has been found to predict higher learning, well-being, and psychosocial functioning" (Fong et al., 2019, p. 122). Intrinsic motivation is important in athletic training clinical education and should be understood so the preceptor can understand what intrinsically drives a student in their clinical placement. Intrinsic motivation was studied, and it found that "students with greater levels of intrinsic motivation demonstrate strong conceptual learning, improved memory, and high overall achievement in school" (Augustyniak et al., 2016, p. 465). This is also important to understand as this may help the preceptor to challenge the

student in a different way to help them achieve their intrinsic motivation. Mazerolle and Dodge (2015) found in their study that students value mentorship from their preceptors and being challenged in their clinical setting. They found that "students in the current study indicated that their preceptors not only challenged them clinically with frequent questioning but also took the time to discuss matters that were not always related to athletic training" (Mazerolle & Dodge, 2015, p. 143).

Focusing on the impact of extrinsic motivation and feedback on intrinsic motivation could help to understand the motivation behind students. Motivation is a multifaceted phenomenon, as individuals can experience different levels of motivation as well as feel motivated due to different factors (Akhtar et al., 2017). Intrinsic motivation should be discussed so that clinical preceptors understand what drives a student to want to be successful in their clinical placement. Bridging the gap between didactic and clinical education is a foundation that students need to apply in the clinical setting. This application and bridging the gap is related to the student's intrinsic motivation in their clinical setting. Students with greater levels of intrinsic motivation are associated with high levels of effort and task performance (Augustyniak et al., 2016).

Student intrinsic motivation and the tasks required in clinical should be explored to better understand if there is a relationship. Student intrinsic motivation and preceptor feedback should also be investigated to understand if there is a relationship, so strategies can be implemented for improvements if warranted. In the classroom, giving information that highlights shortcomings in a student's work can simultaneously instruct the student toward greater gains in learning, yet undermine self-confidence and intrinsic motivation or the proclivity to engage in an activity due to the inherent satisfaction it brings (Fong et al., 2019). In athletic training education, students

perform tasks and skills that can have a relationship to their intrinsic motivation. Orsini et al. (2015) found in their study competence is not meant as an attained skill or ability but focuses more on confidence and effectiveness. Other studies argued the importance of providing optimal challenges for students to feel competent and enhancing intrinsic motivation (Orsini et al., 2015).

Orsini et al. (2015) found that the clinical learning environment can help incorporate intrinsic motivation through autonomy-supportive teaching styles, to help students feel autonomous, competent, and supported by their teachers and peers. Preceptors incorporate this autonomy during clinical rotations, as they should allow students to work under their supervision to master skills learned in didactic education, but in the clinical setting. This autonomy could also play an important role in the future of an ATS.

Students with greater levels of intrinsic motivation demonstrate strong conceptual learning, improved memory, and high overall achievement in school (Augustyniak et al., 2016). "Practice conditions that support a performer's sense of agency, or autonomy and self-determination, even in ostensibly small ways, can affect motor performance and learning" (Lewthwaite & Wulf, 2017, p. 39). Understanding what drives and motivates a student can be a valuable tool for clinical education coordinators and the preceptors involved in clinical education. Motivation is important to understand and embrace for future athletic training students and preceptors.

Feedback is believed to be a significant factor in fostering and impacting intrinsic motivation (Fong et al., 2019). Understanding feedback and its effects on student intrinsic motivation is important for educators. Fong et al. (2019) found that "feedback is generally understood as numerous procedures that are used to tell a learner if a response is right or wrong" (Fong et al., 2019, p. 122). In athletic training clinical education, feedback is essential because it

gives information to students about their skills and helps them to improve and refine them, and improve their reasoning and professional behaviors (Nottingham & Henning, 2014a). Clinical education feedback is also different from didactic education and the type of feedback that is given. Feedback promotes "reflective and experiential learning, which involves 'training on the job,' and reflecting on experiences, incidents, and feelings" (Hardavella et al., 2017, p. 328).

The approach to feedback is also a crucial part that should be considered. Lefroy et al. (2015) created a new definition of feedback that states helpful feedback like a supportive conversation helps develop competencies, self-efficacy, and aids in their improvement moving forward which also can be related to intrinsic motivation (p. 284). This is important to know and understand as it could impact the student's performance in the clinical setting. Feedback can unlock student interest and persistence in completing a task (p. 288). Developing feedback techniques and implications to feedback is valuable to know and understand and its impact on the student moving forward. A study by Orsini et al. (2015) found that understanding teaching styles and behaviors in both the didactic and clinical education settings can influence student intrinsic motivation. This is important to know and understand because the type of feedback given in those environments may affect the student's intrinsic motivation and how they respond.

ATS each have different intrinsic motivational factors that drive them in their clinical education. Students must develop an interest and enjoyment of learning (Augustyniak et al., 2016). By understanding what intrinsically motivates an ATS, clinical preceptors can utilize a clinical site where students can have ample opportunity to apply the knowledge learned in the didactic setting could be crucial to motivation. The ability of athletic training educators to understand and set specific goals can have an impact on the motivation of the student in their didactic and clinical education.

While understanding intrinsic motivation is important, it is equally important to understand extrinsic motivation and how preceptor feedback affects it. Although not the specific concern of this study, it is important to differentiate them conceptually. Extrinsic motivation is identified by Ryan and Deci (2020c) as "behaviors done for reason other than their inherent satisfaction" (p. 3). Identifying if there is a relationship between preceptor feedback and ATS motivation can also benefit clinical education. Ryan and Deci (2020c) also described extrinsic motivation as "amotivation" (p. 3) and can result in "either lack of felt competence to perform or lack of value or interest" (p. 3). Understanding that extrinsic motivation has an impact on a student's motivation is important to consider for preceptors who are providing feedback to athletic training students.

Intrinsic Motivation Inventory (Ryan & Deci, 2000b)

The impact of ATS intrinsic motivation in the clinical setting can be evaluated to better understand what motivates that student. One way to evaluate this intrinsic motivation is by utilizing the intrinsic motivation inventory. The IMI (Ryan & Deci, 2000b) is a tool that can be used to investigate students' intrinsic motivation. It is a multidimensional scale developed in support of the SDT, a strongly validated theory claiming that motivation and regulation are guided by three innate needs: autonomy, belonging, and competence (Ostrow & Heffernan, 2018). Determining what intrinsic factors impact students in their clinical education can help educators understand how to challenge students so they feel their intrinsic motivation needs are being met. Studies have also shown that students with higher intrinsic motivation are also more persistent (Augustyniak et al., 2016). Intrinsic motivation is a powerful factor in performance, persistence to learn, and productivity (Augustyniak et al., 2016). Utilizing the IMI (Ryan & Deci, 2000b) will investigate students' intrinsic motivation and what influences them in their daily

education and clinical practice. The IMI can be utilized to better understand what intrinsically motivates an ATS in their clinical placement and strategies to keep them engaged throughout their rotation.

There have been no studies conducted on utilizing the IMI in athletic training education. There have been studies conducted in other healthcare professions. A study in nursing used the interest and enjoyment subscale to determine the intrinsic motivation (Torbergsen et al., 2021). Another study used the IMI for schizophrenia research for psychometric adaptation for neuropsychiatric samples (Choi et al., 2009). The IMI was also used in a study for medical students to determine if using virtual reality-based education affected intrinsic motivation (Satter et al., 2020). Bailey et al. (2021) used the IMI to synchronous and asynchronous communication for online learning to determine the intrinsic motivation in education students. While these studies utilized the IMI, they did not research each subscale. Most studies focused on one subscale and how it was utilized for nursing, education, and psychology. Using previously conducted studies on IMI from healthcare professions and in education is valuable for ATS intrinsic motivation to understand how students are intrinsically motivation and if there may be a relationship between intrinsic motivation and how an ATS may perceive preceptor feedback in their clinical setting.

Autonomous Medical Practice

Motivation and feedback are important components in clinical education that should be incorporated as they both should be considered to engage the student and aid in their success. There can be benefit in providing students with an environment of autonomous medical practice. SDT can be incorporated by allowing the student to move away from direct supervision from their preceptor to independent autonomy (Sawatsky et al., 2022). Understanding the relationship

between SDT and autonomous medical practice could impact student motivation as they have the autonomy to make decisions based on the skills that they have learned, along with incorporating feedback from their preceptor. Educators can integrate supervision and autonomy support in the clinical setting, while also motivating the learner to make decisions with hands-on approaches to supervision from preceptor (Sawatsky et al., 2022). Using autonomous medical practice for students in clinical education can be a valuable piece to help keep students motivated in their clinical setting and not get bored.

Creating environments that allow students to work autonomously under the supervision of a clinical preceptor could have an impact on students' intrinsic and extrinsic motivation. State law limits the amount of autonomy that can be given to a student. The Ohio Laws and Administrative Rules (2023) state,

> A student shall be supervised by an Ohio licensed athletic training. The Supervising athletic trainer is responsible for planning, directing, and evaluating the student's athletic training experiences. Supervision requires daily visual and audible contact to all the sites at which the student provides services. (p. 1)

ATSs can practice autonomously in their clinical rotation but still are required to be under the supervision of their preceptor.

Several factors should be considered when examining autonomous medical practice in the AT curriculum. It is important to understand that not all students learn the same way and preceptors should be adaptative to each student. When looking at autonomy from the teacher or in this case, the preceptor, it is important to understand that autonomy support also predicts amotivation, meaning that a lack of autonomy support can be demotivating for students who feel competent and autonomous in a subject (Bureau et al., 2022). Autonomous medical practice can

be a strong practice for some students in their clinical rotation but can also be detrimental to those students who may not like that autonomy and lack of feedback which can affect their intrinsic motivation in that clinical setting.

ATS intrinsic motivation in clinical education is a complex construct. The internal motivation of the student, student perceptions of feedback in the clinical setting, and preceptor knowledge and use of effective feedback strategies all play a role. To better understand the student and preceptor in the clinical setting, it is important to consider the evolution and current state of AT Education and the impact that it has had on clinical education from the beginning until now. Clinical education, preceptor development, and training provide insights into the challenges facing student intrinsic motivation. The ability to understand a student's intrinsic motivational influences through feedback analysis can shed insight into how they perceive components in their daily clinical education experiences.

Conclusion

Understanding the impact that preceptor feedback has on athletic training students' intrinsic motivation is important for athletic training clinical education. As previous research has discussed, it is important to understand what facilitators and barriers motivate students in their athletic training program. It is also equally important to understand how the preceptor's feedback influences the ATS in that clinical site. This can be understood by utilizing the Intrinsic Motivation Inventory (Ryan & Deci, 2000b) as it gives a better understanding of what intrinsically motivates an ATS in their clinical education. Research has suggested ways to improve preceptor feedback which is shown to be impactful on the athletic training students' intrinsic motivation. These suggestions can be utilized to create new preceptor training techniques, which can be impactful to the ATS in their clinical rotation.

CHAPTER III

METHODOLOGY

This research study aimed to understand if a preceptor's feedback affects the ATS intrinsic motivation in their clinical rotation. A preceptor interacts with a student in their clinical rotation and provides feedback to help students apply didactic education with clinical education. It is found that student motivation is a key component to students completing their athletic training degree and pursuing a certification in athletic training (Dodge et al., 2009; Mazerolle et al., 2013; Peer & McClendon, 2002). Understanding what motivates a student in their clinical rotation and how preceptor feedback relates to that is the driving force for this study. Utilizing the IMI (Ryan & Deci, 2000b), we can understand if incorporating a preceptor training intervention affects the athletic training student's intrinsic motivation. There has not been research conducted utilizing the IMI (Ryan & Deci, 2000b) for athletic training students, therefore this study aims to better understand facilitators and barriers related to preceptor feedback and how it effects motivation on ATS. This chapter explains the research approach, researcher role and positionality, instrumentation data, data collection, data analysis, trustworthiness, research ethics, and a brief overview of the CPED principles.

Research Approach

This study used a mixed-methods approach to understand the impact of preceptor feedback training on athletic training students' internal motivation, student perceptions of preceptor feedback, and preceptor self-perceptions of feedback practices. This study used quantitative data using the IMI subscale scores to evaluate ATS intrinsic motivation as a pre-test at the beginning of the semester, and again with a post-test at the end of the semester.

Quantitative data, the IMI scores, were collected via Qualtrics™ at the beginning of the semester. Students accessed Qualtrics™ and completed the IMI at their convenience. Seven subscales were evaluated using a Likert scale rating of 1–7. These subscales were interest/enjoyment, perceived competence, effort/importance, pressure/tension, perceived choice, value/usefulness, and relatedness. At the midpoint of the semester, a preceptor feedback intervention was administered. The same IMI was then administered again in the second half of the semester via Qualtrics™, using the same Likert Scale to assess the same subscales. In the middle of the two sets of IMI, a blinded preceptor intervention was administered via email to the preceptors.

This blinded intervention was implemented mid-semester exclusively for the preceptors. These data were statistically analyzed to determine if there was a significant difference in student perceptions of feedback after preceptor feedback training as the intervention. All qualitative data were transcribed using specific software through the Research and Evaluation Bureau at Kent State University (KSU). Table 1 is the instrumentation used for this study.

The qualitative components of this study involved incorporating a phenomenological and interpretive analysis of student journals and semi-structured interviews for the ATS perceptions of preceptor feedback. A phenomenological approach is focused on how people experience and draw meaning from their worlds (Pitney & Parker, 2002). This approach also focuses on the meaning that several participants assign to a particular experience (Pitney & Parker, 2002). Students were asked open-ended journaling questions that related to their preceptor’s feedback and motivation in their clinical rotation that were performed before the preceptor intervention and after the preceptor intervention. Additional qualitative analysis was performed on the preceptor's self-perceptions using semi-structured interviews at the conclusion of the study to detect the barriers and

Table 1

Instrumentation

Research Questions	Quantitative or Qualitative	Independent and Dependent Variables	Data Collection	Data Analysis
1. Is there a significant difference in AT student intrinsic motivation subscale scores as measured by the IMI following preceptor training intervention?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Total Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-test
1a. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Interest/Enjoyment subscale?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Subscale Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-Test
1b. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on Perceived Competence?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Subscale Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-Test
1c. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Effort/Importance?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Subscale Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-Test
1d. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Pressure/Tension?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Subscale Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-Test

(*table continues*)

Table 1 (continued)

Instrumentation

Research Questions	Quantitative or Qualitative	Independent and Dependent Variables	Data Collection	Data Analysis
1e. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Perceived Choice?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Subscale Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-Test
1f. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Value/Usefulness?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Subscale Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-Test
1g. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Relatedness?	Quantitative: Repeated Measures	IV: Formal training (Pre and Post) DV: IMI Subscale Scores	Sept 2023 – IMI Pre-test Dec 2023 – IMI post score	Dependent T-Test
2. How do students perceive preceptor feedback following the preceptor training intervention?	Qualitative	Emergent Themes and Subthemes	Journal entries	Phenomenological analysis
2a. What did students perceive to be the facilitators and barriers to intrinsic motivation as reflected in preceptor feedback?	Qualitative	Emergent Themes and Subthemes	Journal entries	Phenomenological analysis

facilitators of intrinsic motivation. All qualitative data were transcribed using specific software through the Research and Evaluation Bureau at KSU. Appendix E is the instrumentation that was utilized.

Research Context, Site, and Participants

For this study, purposeful, convenience sampling of participants was utilized. A sampling of 10 universities with CAATE-accredited MSAT programs was used. Snowball sampling was used to send emails to program coordinators and clinical education coordinators to forward to current MSAT students within their program, explaining the purpose of the project. A consent form detailing the study parameters was also sent to potential MSAT students. The student was asked in the pre-IMI to identify their current preceptor and email address so that they were able to be contacted to participate in the intervention. Students were also asked if they were willing to participate in an end-of-year interview by providing their email addresses after completing the initial IMI. For the quantitative and qualitative portions of the study, the goal was to obtain a variety of participants including demographics on age, gender, and ethnicity. Since 10 programs were utilized, program coordinators and clinical education coordinators were contacted to determine how many students were in their MSAT program at their institution. Based on a G*Power analysis (.95), an *a priori* sample size of 43 total students was needed to ensure a medium effect size (.5) with alpha at .05.

Researcher Role and Positionality

This project focused on the intrinsic motivation of athletic training students and feedback delivered by preceptors given at clinical sites. The researcher's positionality in this study worked to remain honest and unbiased during the duration of the study. As an athletic training professional working with students, it was the goal to obtain a better understanding of students' intrinsic motivation and if there is a relationship with preceptor feedback. The outcomes of this study will be utilized to create better feedback strategies for preceptors, which could have an impact on the intrinsic motivation of athletic training students.

Instrumentation and Data

The instrument used for this study was the IMI (Ryan & Deci, 2000b). This inventory is used to measure the intrinsic motivation of the participant and evaluates the subscales of interest/enjoyment, perceived competence, effort/importance, pressure/tension, perceived choice, value/usefulness, and relatedness (Ryan & Deci, 2000a). Each subscale was evaluated to better understand if preceptor feedback influences the subscales within intrinsic motivation. The validity of the IMI was examined by McAuley et al. (1987) who found strong support for its validity (Ryan & Deci, 2000a). Reliability was determined by coefficient alpha (Cronbach, 1951). McAuley et al. (1989) found internal consistency for the subscales was generally quite adequate with the alpha coefficient for each of the following scales shown in parentheses: interest-enjoyment ($\alpha = .78$); perceived competence ($\alpha = .80$); effort ($\alpha = .84$); and pressure-tension ($\alpha = .68$). The overall scale also appears to be "internally consistent with an alpha coefficient of .85" (McAuley et al., 1989, p. 51).

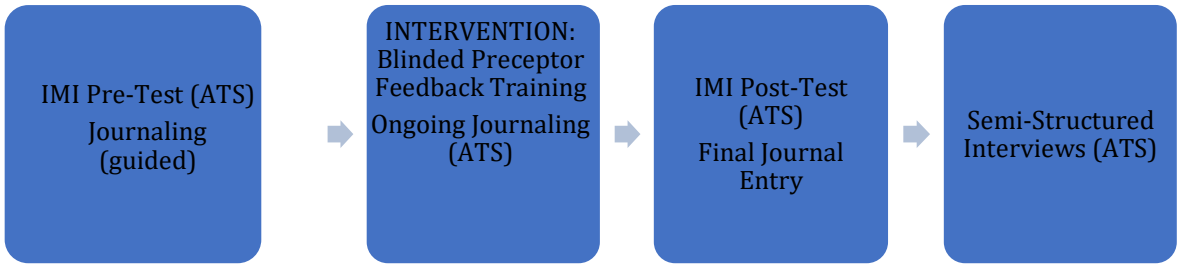
For this study, the following scale was utilized using the Likert-type scale ranging from 1–*not at all true*, 4–*somewhat true*, and 7–*very true*. Data were exported from Qualtrics™ to a Microsoft Excel™ spreadsheet and analyzed using IBM® SPSS® Statistical Tool Version 29, New York, for the Dependent *t*-tests. The dependent variables were the total IMI subscale scores, and the independent variables were the preceptor formal training. Significance was set *a priori* at $\alpha = .05$.

Data Collection

After receiving IRB approval, the study proceeded with recruitment, consent, and data collection according to the timeline depicted in Appendix E. The timeline is shown in Figure 3.

Figure 3

Timeline



Students participating in the study received the IMI pre-test on September 26th, which remained open until October 23rd. Guided journaling took place once between October 30th and November 10th. Preceptors then received the blinded preceptor feedback intervention on November 10th and concluded on November 20th. The second guided journaling was administered on November 20th and concluded on November 27th. The IMI post-test was distributed to students on November 20th and closed on December 6th. Semi-structured interviews commenced on December 11th and were conducted separately with ATS via Microsoft Teams™, where each student was asked a total of five guided interview questions. The time of the interviews varied an average of five and a half minutes.

Intrinsic Motivation Inventory

The IMI (Ryan & Deci, 2000b) consists of five categories, each with subscales, all of which are analytically coherent and stable across a variety of tasks, conditions, and settings (Ryan & Deci, 2000b). Past research suggests that order effects of item presentation appear to be negligible, and the inclusion or exclusion of specific subscales appear to have no impact on others (Ryan & Deci, 2000b). The inventory and scale followed the format listed in Appendix G.

Quantitative Analysis

The quantitative portion of this study was conducted using the Qualtrics™ platform where the athletic training students completed the IMI survey (Ryan & Deci, 2000b). It has been used in several experiments related to intrinsic motivation and self-regulation (Ryan & Deci, 2000b). The instrument assesses participant's interests/enjoyment, perceived competence, effort, value/usefulness, felt pressure and tension, and perceived choice while evaluating if preceptor feedback has an effect on AT student intrinsic motivation (Ryan & Deci, 2000b). The Qualtrics™ evaluations provided numerical data on AT student intrinsic motivation through a Likert scale ranging from 1–7: 1–*not true at all*, 4–*somewhat true*, and 7–*very true*. These data sets were collected, average scores for each category, and the cumulative scores were taken to compare the pre- and post-IMI.

Qualitative Analysis

A phenomenological approach was used for this study as it attempts to explain the lived experiences with the relationship between the preceptor and student throughout the semester. Qualitative data were collected through two guided journal entries and were utilized throughout the study. These journals were available to students two weeks after the pre-IMI, through Qualtrics^{XM}, and once after the blinded preceptor intervention was completed, for a total of two journal prompts for the study. The journaling prompt was created and submitted to the forum, so students had the question(s) for that week. Students filled out and submitted the guided journaling individually directly in the Qualtrics^{XM} forum. This forum was only visible to each participant.

Guided Journaling

The guided journaling began 10 days following the IMI (Ryan & Deci, 2000b) pre-test, and the second journal a month later. The following were the journaling questions:

1. Explain how your preceptor has interacted with you in the last two weeks.
2. What type of feedback has been given to you? Explain the context (ex. paper feedback, verbal feedback, other)
3. What type of questions have you asked your preceptor? Explain.
4. Do you feel more or less motivated to go to your clinical rotation than your last journal entry? Why?
5. What are you going to do differently in your clinical rotation after today? Why?

Common words and phrases were compiled from the interviews to develop themes (Austin & Sutton, 2014). A phenomenological approach was utilized to understand the point of view of the participant. This qualitative approach was chosen because it was important to understand how the student perceived their preceptor's feedback in their clinical education. Phenomenological-lived experiences were explored by identifying facilitators and barriers from the open-ended journaling questions and student interviews. Common words and phrases heard throughout the interview were compiled by writing them down in a journal and then putting them into a Microsoft Excel spreadsheet. Once the common words and phrases were established, themes were established and created for each journal question. Journal question responses and interview transcripts were sent to two other AT educators, with a combined 30 years of education experience, to complete the triangulation process needed for qualitative studies. Once each educator had time to identify themes and subthemes independently, the researcher met with each educator to discuss them and reconcile themes for the overall study. Member checking was

conducted throughout the interviews to ensure that the transcript reflected what the student was saying accurately.

Preceptor Intervention

At the midway point of the semester, the researcher conducted an intervention for preceptors of all students. The 9-minute intervention highlighted key important factors such as types of feedback and strategies for feedback taken from the *Practical Guide to the Evaluation of Clinical Competence* (Holmboe et al., 2018). This intervention was conducted in a blinded setting as the students did not know it was being conducted. Formal training followed the tips for "*Fostering a Culture of Effective Feedback*" for Faculty and Learners to provide suggestions to preceptors on how to build relationships with their patients (Holmboe et al., 2018, p. 261). The preceptor intervention is shown in Appendix H.

Interviews

After the final IMI, ATS volunteered to participate in interviews in the survey by placing their email in the last question. The number of interviews conducted was determined based on the number of willing students to volunteer and was compiled until data saturation was achieved. These interviews took place via Microsoft Teams and lasted approximately five and a half minutes. Verbal consent to record was given before recording by the participant. The interviews were recorded verbatim so they could be transcribed. Figure 4 shows the questions utilized to start the interview.

Figure 4

Questions to Start the Interview

1. How did your preceptor give feedback at the beginning of your clinical rotation?
2. How did your preceptor give feedback at the end of your clinical rotation?
3. How did your preceptor's feedback effect your intrinsic motivation?
4. What type of feedback did your preceptor give you that influenced you negatively?
5. Any other comments you would like to share?

Data Analysis

Quantitative data were collected from the IMI (Ryan & Deci, 2000b) and analyzed using IBM SPSS® Statistical Software (Chicago, Version 27). The dependent *t*-test was used to determine if there was a significant difference between the IMI subscales pre-test and again after the preceptor intervention was administered as the post-test. Significance was set *a priori* at α=.05 in the data analysis.

Qualitative data were analyzed using the phenomenological approach. Guided open-ended journaling and semi-structured interviews were conducted and recorded to be transcribed. This was conducted by listening to previously recorded interviews and utilizing coding by writing recurring themes down and grouping similar codes. This research followed the seven steps outlined by Knaack (1984). The steps are as follows (Knaack, 1984, pp. 111–112):

1. Read through the entire protocol (the subjects' description) for a sense of the whole. (Taped interviews need to be transcribed verbatim).
2. Extract significant statements that directly pertain to the investigated topic.

3. Formulate meanings as they emerge from the significant statements. This involves creative insight, which remains faithful to the original data.
4. Repeat the above steps for each protocol and organize the formulated meanings into clustered themes.
    a. Validate the cluster of themes by referring back to the original protocols to see if any data has been ignored or added to.
    b. If there are contradictory themes, this may be the real and valid experience. This data should not be ignored or discarded.
5. The results of the analysis so far are then integrated into an exhaustive description of the investigated topic.
6. Formulate the exhaustive description of the phenomenon into a statement of identification of its fundamental structure.
7. To validate the analysis, return to each subject (co-researcher) and ask if this analysis describes their experience. If the co-researcher adds or deletes any information, incorporate this new data into the final project.

The steps outlined by Knaack (1984) were used for this study to understand the lived experiences of students and how preceptor feedback affected their intrinsic motivation. Student interviews were transcribed using the Transcriber© (Transcriber 1.5.2) app to interpret voices into words to identify themes and subthemes. Triangulation was also completed to discuss the identified themes and subthemes with two other athletic training educators to ensure that saturation was met from the interviews.

Trustworthiness

Trustworthiness was ensured by using different methods to triangulate the data. Member checking was crucial to ensure that the researcher was not creating bias during the study. Member checking was used by questioning participants to ensure that the answer was intended to mean what it meant. The pre- and post-journaling questions, along with the interviews, were sent to two other athletic training educators to complete the triangulation. Once each educator came up with identified themes, the researcher met with each educator separately to discuss themes that were identified to create themes and subthemes for facilitators and barriers for this study. Peer reviewing took place throughout the study by the research committee and coworkers to maintain trustworthiness throughout the study. This also helped to lessen the likelihood that any mistakes were made throughout the study and could be corrected immediately.

Research Ethics

The goal of any research study is to ensure that ethics are incorporated and that no harm is elicited upon participants. Some of the questions asked during the study may cause certain emotions and feelings based on previous experiences from the participants. The researcher completed CITI training before the research was conducted and understood all aspects related to privacy and all other knowledge important for the study. An IRB form was also submitted for approval to ensure that the study was being conducted appropriately and was considered an ethical study. Any feedback given by the IRB was taken into consideration and updated to meet their criteria for approval.

Before participation in the study, an informed consent form was sent to all participants. All aspects of the study were included along with the title of the study in the form. This ensured that participants knew and understood the research being conducted and gave consent for their

responses to be recorded and utilized for the study. It was also noted in the informed consent of any benefits or risks that may be associated with the study along with how confidentiality and privacy were maintained during the study. In the conclusion of the informed consent form, participants were advised that this is a voluntary study, that there are minimal risks involved in this study, and that they could drop out of the study at any point in time. The contact information of the researcher was included if participants had any questions or concerns during the study at any point in time.

It was crucial to reiterate to the participants that confidentiality and privacy would be ensured and followed during the entire research process. The identities of the participants were removed; no names or identifying characteristics were included in the study. A peer review of the study was conducted throughout the study to solidify that the researcher was remaining compliant in the research. Any topic that was identified to be biased or needing to be changed, was done so by the researcher. Ethics were included and followed in the entirety of the study.

Conclusion

This study focused on ATS intrinsic motivation scores before and after preceptor intervention was implemented. It also aimed to determine what facilitators and barriers contributed to the ATS evaluating themselves as they did. With the complexity of the subscales and questions asked, a mixed methods approach was used to assess the quantitative and qualitative data. The IMI along with open-ended questions as instruments were used to provide insight into the intrinsic motivation of ATS and if there is an effect of preceptor feedback in the clinical education setting.

CHAPTER IV

RESULTS

From the CAATE website for accredited programs, there were 210 recruitment emails sent to program coordinators and/or clinical educational coordinators who forwarded to students in mid-August. This yielded a response from 43 students who agreed to participate in the study resulting in a 20.5% response rate. It was determined that surveys with a smaller sample size must have a response rate of 20–25% to provide fairly confident estimates (M.-J. Wu et al., 2022).

This mixed-methods study investigated ATS intrinsic motivation by using the IMI (Ryan and Deci, 2000b). This was conducted via Qualtrics^{XM}. Forty-three students completed the IMI with demographic information shown in Table 2. Other data including guided journaling responses completed by 20 students via Qualtrics were analyzed. Six students also agreed to be interviewed about how preceptor feedback affected them in their clinical setting. All preceptors were sent the intervention, but it was not calculated how many participated.

Quantitative research questions and sub-questions were developed to explore the ATS intrinsic motivation pre to post-IMI when utilizing the preceptor training intervention. Qualitative research questions and sub-questions were developed to investigate lived experiences and perceptions of preceptor's feedback in their clinical setting. This chapter reflects the findings for each research question.

Research Question 1

1. *Is there a significant difference in AT student intrinsic motivation subscale (interest/enjoyment, perceived competence, effort/importance, pressure/tension,*

perceived choice, value/usefulness, relatedness) scores as measured by the IMI following preceptor feedback training intervention?

Table 2

Subscales Paired Samples Test Results

	Pretest Mean (SD)	Posttest Mean (SD)	t	Effect size
Interest/Enjoyment	6.43 (.579)	6.00 (.810)	t(29) 2.770 p=.010*	Cohen's d=.506
Perceived Competence	5.38 (.978)	5.61 (.997)	t(29) 1.998 p=.055	Cohen's d=.365
Effort/Importance	6.71 (.503)	6.43 (.782)	t(29) 1.973 p=.058	Cohen's d=.360
Pressure/Tension	3.49 (.982)	3.35 (1.284)	t(29) 0.579 p=.567	Cohen's d=.106
Perceived Choice	5.69 (1.200)	5.22 (1.160)	t(28) 2.293 p=.030*	Cohen's d=.426
Value/Usefulness	6.87 (.400)	6.51 (.895)	t(27) 2.199 p=.037*	Cohen's d=.416
Relatedness	6.33 (.923)	6.06 (.863)	t(29) 1.428 p=.164	Cohen's d=.261

*Significant difference between pre-test and post-test $p \leq .05$

a. *Is there a significant difference in AT student intrinsic motivation scores as measured by the IMI following preceptor feedback training on the Interest/Enjoyment subscale?*

When investigating the interest/enjoyment subscale-dependent *t*-test scores, it was determined that there was a significant difference in the pre-intervention score compared to the post-intervention score (.43 ± .86, p = .01). It was indicated that at the beginning of the rotation, ATS were already intrinsically motivated, but also that there was a slight decrease in interest/enjoyment toward the end of the clinical rotation, after the preceptor feedback

intervention. Cohen's *d* was calculated as .506 indicating that preceptor feedback training had a moderate effect on the ATS intrinsic motivation.

b. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on Perceived Competence?

The perceived competence subscale-dependent *t*-test scores determined that there was no significant change from the pre-intervention to the post-intervention (-.23±.63, p=.05). This indicates that ATS were intrinsically motivated in perceived competence and that there was no change from the beginning of the clinical rotation to the end of the clinical rotation, so the intrinsic motivation of students was maintained after the preceptor feedback intervention was implemented.

c. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Effort/Importance?

The dependent *t*-test for the effort/importance subscale scores was not significant from pre-intervention to post-intervention (.28±.86, $p = .058$). These results indicate ATS were intrinsically motivated in effort/importance. There was no difference in effort/importance throughout the clinical rotation for the student, and the intrinsic motivation of the student was maintained throughout the semester after the preceptor feedback intervention was implemented.

d. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Pressure/Tension?

The dependent *t*-test for the pressure/tension subscale scores were not significantly different (.13±1.30, $p = .567$) from pre-intervention to post-intervention. This indicates that ATS scored low in pressure/tension which did not affect the intrinsic motivation throughout their

clinical rotation and the student remained intrinsically motivated after the preceptor feedback intervention was completed.

e. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Perceived Choice?

A dependent *t*-test was used to analyze the subscale of perceived choice. Results indicated that there was a statistically significant decrease in the post-intervention IMI score from the pre-intervention score (.46±1.09, $p = .030$). This indicates that the ATS was intrinsically motivated and that there was a decrease in perceived choice throughout the clinical rotation after the feedback training was implemented.

f. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Value/Usefulness?

The value/usefulness subscale was analyzed using a dependent *t*-test. Based on the analysis, it was determined that there was a statistically significant decrease as the post-intervention scores were lower than the pre-intervention (.35±85, $p = .037$). This indicates that the ATS was intrinsically motivated in value/usefulness, but that it decreased at the end of the clinical rotation compared to the beginning after the feedback training was implemented.

g. Is there a significant difference in AT student internal motivation scores as measured by the IMI following preceptor feedback training on the Relatedness?

Dependent *t*-tests were utilized to analyze the last subscale, relatedness. Based on the scores, there was no statistical difference in the pre- and post-intervention scores (.27±1.05, $p = .16$). This indicates that the ATS was intrinsically motivated and remained intrinsically motivated in the subscale of relatedness after the preceptor feedback training was implemented.

In conclusion, although it was found that ATS were intrinsically motivated in the pre-IMI, there were significant decreases in the subscales of interest/enjoyment, perceived choice, and value/usefulness. It also was found that there was no statistical change in perceived competence, effort/importance, and relatedness. ATS intrinsic motivation for pressure/tension was low at the beginning of the IMI, but stayed the same after the preceptor feedback training was implemented. The indication of no change shows that the ATS felt that they remained intrinsically motivated throughout their clinical rotation and were not affected by the preceptor feedback training intervention that was implemented. Qualitative analysis was then utilized to investigate potential changes in intrinsic motivation from the student regarding post-intervention preceptor feedback in the next section.

Research Question 2

Research question 2 investigated the intrinsic motivation changes, if any, from preceptor feedback throughout the clinical rotation. Within the Qualtrics survey, open-ended journal entry questions were utilized to better understand if students' intrinsic motivation was affected by their preceptor's feedback prior to and after a blinded preceptor intervention focusing on best practices in clinical feedback. Twenty participants completed the journaling. The questions used as journal entries included:

1. Explain how your preceptor has interacted with you in the last two weeks.
2. What type of feedback has been given to you? Explain the context. (ex. Paper feedback, verbal feedback, etc.)
3. What type of questions have you asked your preceptor? Explain.
4. Do you feel more or less motivated to go to your clinical rotation than when you started? Explain.

5. What are you going to do differently in your clinical rotation after today? Why?

The qualitative data were collected directly on the Qualtrics inventory and printed to identify coding. Coding was completed by the researcher, the dissertation committee chair, and an outside professional not involved in the study to complete triangulation for the study. Each coder worked individually on identifying themes and subthemes. The researcher met with each coder to discuss the identified themes and subthemes and ensured saturation had been reached. Final themes and subthemes evolved based on facilitators and barriers to ATS intrinsic motivation from preceptor feedback.

2. *How do students perceive preceptor feedback before and after the preceptor training feedback intervention?*

The main research question was broken down into two sub-questions to determine how students perceive preceptor feedback before and after the preceptor training feedback intervention. They are as follows:

a. *What did students perceive to be the facilitators and barriers to intrinsic motivation as reflected in preceptor feedback?*
b. *What preceptor feedback practices were perceived to negatively influence ATS intrinsic motivation?*

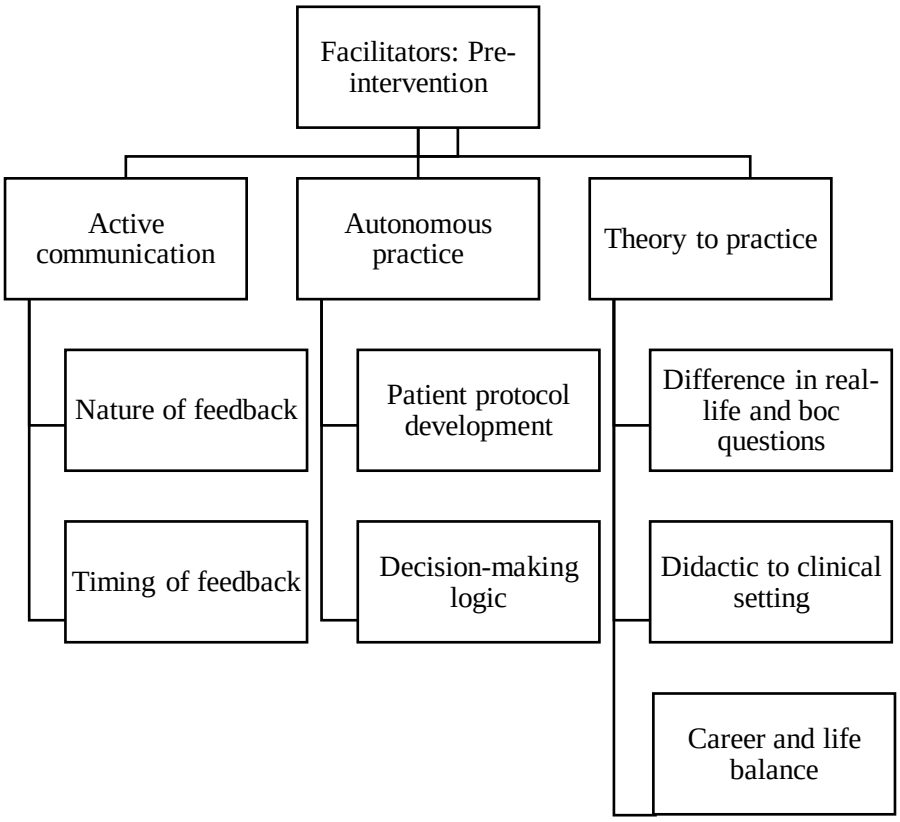
Facilitators of IM

Facilitators and barriers were evaluated thematically in pre- and post-preceptor training. Unique themes were presented for pre-intervention facilitators of intrinsic motivation, pre-intervention barriers for ATS intrinsic motivation, post-intervention barriers of intrinsic motivation, and, lastly, post-intervention barriers. Three main themes emerged as preintervention

facilitators. The themes were (a) active communication, (b) autonomous practice, and (c) theory to practice. These themes and subthemes can be found in Figure 5.

Figure 5

Facilitators of ATS Intrinsic Motivation: Pre-Intervention (Preceptor Feedback Training)



Theme 1: Active Communication

Active communication is an important component between preceptor and student and was identified as an emerging theme. Communication provides an opportunity for students to ask questions, obtain feedback from their preceptor about the evaluations that they are completing, and discuss clinical situations that may occur in the clinical setting. Students are encouraged by their clinical education coordinators and preceptors to communicate often and ask questions to understand the reasons behind what they are doing clinically. Many students identified active

communication as one of the feedback interactions with their preceptor that was valuable and intrinsically motivated them during their clinical rotation. One student stated, “We are constantly interacting by discussing athletic training-related topics and discussing patient injuries and rehab plans.” Another student reinforced the relevance and impact of active communication by saying, “We have consistently been able to interact the last two weeks, whether that’s just having conversations, pregame taping together, or practicing skills.” This ability of a preceptor to interact and give feedback to students is important and meaningful to the ATS. Another student discussed “positive interactions discussing injuries and receiving feedback on evaluations” as a motivating factor in their clinical rotation. More specifically, the nature of the feedback and how the preceptor delivers the feedback to the student was found to be an important aspect of facilitating intrinsic motivation of the student.

As evidenced in their journaling, several students specifically articulated that the nature of the feedback from their preceptor as important. This subtheme of active communication evolved throughout the qualitative analysis. It was found that throughout their clinical experience, the student sought feedback from the preceptor about skills that they were completing in their clinical rotation. The nature of the feedback was identified as an ongoing conversation where the student could ask questions or receive feedback from the preceptor about tasks or skills that they are doing well or need improvement on during their clinical rotation. One participant noted, “Verbal feedback is most common, I enjoy having conversations about the day and about what I can do better.” Another participant supported this notion by saying, “They [the preceptors] communicate with me like I’m an employee, they give me similar responsibilities as an employee. They are like everyday co-worker interactions,” when asked how their preceptor interacted with them. Data analysis also revealed that preceptors play a pivotal role in

mentorship. One participant stated, “My preceptors have a positive impact by openly communicating and taking time to tell me how I modify things for even better results.” This is further elaborated by another participant who acknowledged that she received, “verbal feedback, on how to wrap an injury we had. She gave me an easier way and it was better when applied next time.” Although mostly verbal by nature, the context of the feedback helped keep the student intrinsically motivated: “I mostly get verbal feedback about different tests I did or how to manage patients.” The creation of meaningful relationships and conversations was an important factor central to positive interactions with their preceptors. “This is a great opportunity to develop meaningful conversation,” said one student when asked how feedback from their preceptor helped to keep them intrinsically motivated. As a subtheme of active communication, the nature of the feedback clearly impacted ATS’s intrinsic motivation in clinical education.

The other subtheme related to active communication that emerged in the analysis was the timing of feedback. Timing can be important as students are constantly performing a variety of clinical skills in their rotations. It is the preceptor’s responsibility to give feedback on what the student is doing well and what they should improve on in a meaningful time frame. One participant emphasized the importance of timing of feedback by saying, “He teaches by throwing me in the fire and that teaching method plus valuable and timely feedback has created an environment where I love to go learn.” While another said,

> I receive this feedback after performing a task. If I need a correction, my preceptor will do so in a closed environment. She will also provide positive feedback if I perform a task well or go above and beyond her expectations.

The ability of a preceptor to recognize the timing of feedback is crucial. Giving corrective feedback promptly allows the student to develop or maintain high motivation to succeed as it

guides their practice. For example, giving feedback to students during an evaluation creates an opportune environment where the student can create meaningful conversation with the preceptor. One other participant discussed the timing of an encounter with the preceptor by saying, “She has observed my interactions with patients and provided constructive feedback to grow my skills.” Relative to active communication, both the nature and the timing of the feedback were found to be relevant in this study.

ATS indicated that active communication with consideration for the nature and timing of feedback can facilitate intrinsic motivation in the clinical setting. Verbal, relevant, and prompt feedback appears to be the cornerstone for maintaining intrinsic motivation. As a pre-intervention analysis, it will be important to consider if active communication changes following preceptor feedback training.

Theme 2: Autonomous Practice

A second emergent theme relative to pre-intervention facilitators of ATS intrinsic motivation was autonomous practice. The ability for a student to develop autonomy by working with their preceptor under direct supervision while developing independent practice is an important skill. One participant noted, “I have been given additional opportunities to evaluate acute injuries and practice my skills. This sense of autonomy motivates me to attend.” This concept of supervised, independent practice was articulated by other students as well. One student says that the preceptor “provided good critiques and allowed me to work alone.” Relative to being more intrinsically motivated, one participant specified that “I get more acute stuff and less micromanaging.” Students are expected to practice autonomously after they graduate, and their ability to do so confidently is reflective of the student’s clinical rotation experience. Although there are varying degrees of autonomy at clinical sites, one participant stated, “He has

let me be as autonomous as I want." These comments reinforce the idea that developing the confidence to make autonomous decisions in the clinical setting fosters their intrinsic motivation and is an important component of preceptor practices.

Students discussed that their ability to practice autonomously at their clinical rotation motivated them to continue to attend and engage, as it kept them interacting with their patients along with interacting with this preceptor. Through the analysis, two precise subthemes emerged within the more general autonomous practice theme: inpatient protocol development and decision-making logic. These emerging subthemes were identified as relating to the intrinsic motivation of the student in their clinical rotation.

As a construct of autonomous practice, students are encouraged to help develop patient protocols in specific skills such as rehabilitation and evaluation. The ability of a student to be able to learn patient protocols and assist in evaluations and rehabilitation protocols keeps the students intrinsically motivated in their clinical site. One participant stated,

> I have been focusing more on my rehab techniques and communicating/explaining exercises clearly to the athletes, so I am going to try to build on those skills the last few weeks. I spend the majority of the first part of my rotation working on my eval and palpation skills, and while I still have a lot of room to grow, I think it is a good idea to focus on other aspects of the job as well.

Several students identified the ability to help develop protocols as a motivating factor in their clinical rotation as they were able to interact more with the patient. A participant, when asked if they felt motivated to go to their clinical rotation, stated,

> I feel more motivated to go to my clinical rotation than when I started this round because I have a better understanding of the department culture and routines. I feel I am slowly finding my role which allows me to be more helpful in the clinic.

Another participant, when asked how their preceptor interacted with them, noted, “In the past couple of weeks it has been mostly rehab questions, like what kinds of exercises should I be focusing on and how do I make it so beneficial for him.” This type of engagement between student and preceptor is important because it encourages students to practice autonomously and gain confidence in the application of their clinical skills, ultimately, this will help students in their transition to practice as athletic training professionals by keeping them motivated in their clinical setting. One of the main aspects of clinical education is the application of clinical skills and how it relates to their transition to practice. This was further exemplified by another participant who said the preceptor discussed “about progression/regressing of rehab plans, potential diagnosis for patients with injuries and illnesses” lending to greater intrinsic motivation at the clinical site. The nature of these interactions relative to clinical skill progression and application create new opportunities for students. Through these opportunities to progress clinical application skills, students are using decision-making logic to translate theory to practice.

In addition to patient protocol development in an autonomous environment, applying decision-making logic in the clinical setting appears to intrinsically motivate ATS. This enables the students to bridge the gap between didactic and clinical education to better understand the “why” behind the application of their clinical skills. Decision-making logic comes from practicing autonomously at the clinical rotation and then discussing findings with their preceptor. A participant, when asked if they were more or less motivated to go to their clinical rotation, stated,

> More motivated. My school is a tight community and I've been able to build relationships with a lot of the athletes, so I look forward to going to clinics and seeing them succeed along with learning something new every day.

Another participant stated that their preceptor, "Gives me the lead and pushes me to be better." Pushing students to practice autonomously in a decision-making capacity intrinsically motivates them. This can be developed through opportunities for open-questioning as reflected in this comment, "I ask a lot of questions about how they go through differential diagnosis and how they come to RTP [return to play] decisions." These conversations between students and preceptors help the students make sense of the rationale behind their decision-making in their clinical rotation.

In summary, autonomous practice, including developing patient protocols and decision-making logic was identified as pre-intervention facilitators and intrinsic motivators for students. Allowing students to work autonomously and develop confidence while providing feedback about skills that they are doing well and what needs to be improved upon is a critical piece to student intrinsic motivation. A preceptor's willingness to allow students to evolve clinically with progressive latitude for autonomous practice can encourage intrinsic motivation.

Theme 3: Theory to Practice

The third theme that emerged relative to pre-intervention facilitators of intrinsic motivation of ATS was the application of theory to practice. This is an important aspect of clinical education as the student learns from the preceptor's previous experiences and how they handled various situations while integrating their own academic knowledge in a patient care setting. The ability of a student to act on questions about previous experiences and obtain feedback from their preceptor is a major component of translating theory to practice. One

participant said, “Even as a student I can still learn through someone else’s experiences.” Learning from their preceptor and through feedback about how they can act in those real-life situations is valuable for students. As students experience more real-life practice situations in clinicals they report more intrinsic motivation. One participant noted:

> I would say [I was] more motivated. I was always motivated and excited to go to my clinical rotation, but now that I have gotten more comfortable in my setting, I look forward to it more. I feel more confident in my abilities and my knowledge and know that the athletes will listen, and my preceptors are there to help.

The ability for a student to recognize that they can use their classroom theoretical knowledge and that their preceptor has been through different experiences to guide their practice can serve as a strong motivating factor. Several other participants reinforced this concept and expressed, “They will provide us with some direction at the beginning but then let us take over. We talk about the case afterward as well and bounce ideas off of them of how we can improve” and “We talk about whatever is happening at the school with students.” Students recognized and confirmed that the clinical setting is a time to translate theory to practice, “Clinicals are when we should be applying that knowledge and inquiring how what ways apply that knowledge.” Athletic training students can learn a lot from real-life discussions, and this should be valued in the clinical rotation. Applying theory to practice serves as an intrinsic motivator during clinical rotations. Although applying theory to practice is identified as an intrinsic motivator, several key sub-themes further define its application: differences in real-life scenarios and Board of Certification (BOC) questions, didactic to clinical setting, and career and life balance issues impact how this application comes to life.

The first prominent subtheme that emerged relative to application of theory to practice was the differences between real-life situations and BOC questions. Like theory to practice, students can gain confidence from interacting with and asking preceptors questions about real-life situations. Some elements of clinical education cannot be taught in a textbook but are crucial aspects of their educational journey. One participant noted,

> I try to ask questions that wouldn't be found in a textbook. I will often ask their opinion on certain topics that I am learning in class. Whether it be the use of a certain modality such as ultrasound, or an exercise strategy, like plyometrics, or eccentrics. Her clinical experiences provide an interesting viewpoint that I enjoy learning.

Preceptors have the responsibility to help students relate what to do when real-life situations come up. One participant stated, "I have asked her questions about the BOC and questions about patients (injuries, rehabs, referrals)" when they were asked what type of questions were asked to their preceptor. Another participant said, "My preceptor has also prepared case studies for us and will go through those with us and give us immediate feedback." This is also exemplified as a participant describes her experience, "She is helping me learn what I'm learning in class and apply it to my clinical site." Several other students discussed feedback that real-life situations and BOC questions from their preceptor helped them to apply what they were learning in the classroom in their clinical rotation. This carries over in preparation for the BOC examination. Asking for advice with BOC test-taking strategies was identified by participants as another important factor in their application of theory to practice. Participants valued interactions with their preceptors about advice and ways to prepare for their BOC exam in the future. One participant said, "We have done some BOC quiz questions and review prep during our downtime." Another stated, "They have helped me practice answering BOC questions." These

interactions about the BOC exam are important because it helps the student to understand what is expected on the exam and can help prepare for the unknowns which impact confidence and intrinsic motivation. Creating study tips and tricks that the student can utilize for their future boosts confidence and decreases apprehension.

The ability of a student to bridge the gap between didactic and clinical education and apply the knowledge and skills in a variety of settings aids in the development of the professional journey. One participant who tried to dig deeper than the textbook stated, “I try to ask questions that wouldn’t be found in a textbook.” Feedback and questions from the preceptor challenge students to think critically and authentically to utilize skills that may not be learned in a classroom. Another participant noted, “I have asked my preceptor her opinion on certain techniques we have learned in class, along with her opinion on injury rates of her teams and what influences it.” Feedback from preceptors in these conversations is valuable and helpful for students to motivate them intrinsically as they move toward their transition to practice.

The last emerging subtheme relative to applying theory to practice was career advice and life balance. Students may ask for career advice about what they should do after they become professionals or how they balance life with other things in the profession. These conversations can provide a futurist outlook on what their life will be following their educational journey. Several participants identified career advice and life balance from their preceptors as motivation for their future careers in athletic training. One participant, when asked what type of conversation they had with their preceptor, noted, “He also gives life advice and guidance at times.” This was supported by another participant who said, “We’ve also talked about my future and what I would like to do after graduation.” To further reflect on the importance of the preceptor's feedback on preparing students for their transition to practice, a student reflected:

"We talk about what opportunities I can have and what to look for once I become certified." These conversations translate the theory of professionalism rather than clinical skills but are equally important to the intrinsic motivation of the ATS. How this motivates the ATS is demonstrated in this participant's comment:

> I ask my preceptor her specifics on how her life and life balance as an athletic trainer is. We talk about the pros and cons of her job, as well as things that she thinks need to be improved on, both in the job and the profession.

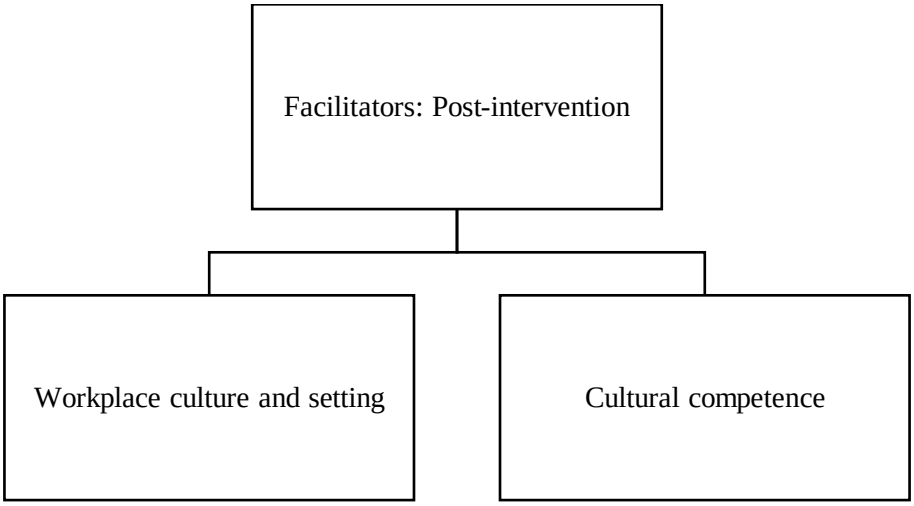
These life discussions and questions about life balance go outside of the normal clinical education questions to embrace the translation of professional skills from theory to practice.

Facilitators of IM-Post Intervention (Preceptor Feedback [FB] Training)

Facilitators of IM were further evaluated qualitatively following the Preceptor FB training program. The purpose of the intervention was to provide feedback education to preceptors to demonstrate best-practices in clinical education feedback. Through a narrated PowerPoint presentation, preceptors reviewed techniques and strategies for improving feedback strategies in their clinical practice. Following this intervention with preceptors, new facilitators of ATS intrinsic motivation emerged. Figure 6 shows the emerging themes post-intervention. These themes, although similar in content, were different in context. They are workplace culture and cultural competence.

Figure 6

Facilitators of IM: Post-Intervention (Preceptor FB Training)



Theme 1: Culture and Setting

Post-preceptor FB training, workplace culture, and setting emerged as novel thematic influencers of internal motivation for the ATS. Students identified workplace culture and setting as being important and valuable to them in their clinical site. One participant stated, “I am getting good opportunities and experience at my site.” Another student noted, “My two new preceptors have a very positive impact openly communicating and taking time to tell me how I modify things for even better results.” Supported by yet another student: “Everything has been good and it has all been positive interactions during practice and in the ATR [athletic training room].” When in a comfortable setting where the student is valued, the workplace culture allows the student to explore their skills in a non-threatening environment.

Preceptors giving students autonomy by providing feedback in their clinical setting along with the ability to be involved in decision-making opportunities helps the student to develop relationships with other athletic trainers, athletes, and coaches, which is an important aspect of

clinical education. One student stated, “My preceptor has interacted with me by involving me with evaluations that she is performing and encourages me to ask any questions I may have.” In reflection of this theme, a participant noted, “I have created a professional bond with both my preceptor and the athletes.” Relationships and bonds being built at the clinical site along with feedback from preceptors are important parts of establishing a welcoming, motivating culture and clinical setting.

Theme 2: Cultural Competence

Another subtheme that emerged after the implementation of the intervention was cultural competence. Cultural competence by definition is “a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations” (Young & Guo, 2020, p. 101). ATS understanding the importance of interacting with a variety of patients can be a valuable piece of clinical education. Students interacting with patients can be in a variety of different capacities such as discussions, interactions, and working with sports that may have different rules and laws based on the nature of that sport. One student noted, “We are constantly interacting by discussing athletic training related topics and discussing patient injuries and rehabilitation plans. She has observed my interactions with patients and provided constructive feedback to grow my skills.” Another component that can be considered as a part of cultural competence is the nature of the sport. One student noted that they ask

> Hockey specific questions. Hockey is a very unique sport from the AT/sports med side of things and [my preceptor] is able to answer all of those questions. This includes stuff like when do we go on the ice and how do you do knee special tests with skates on. Art is also

very knowledgeable on general medical stuff and has lots of experience. I like to pick his brain.

Cultural competence, in all aspects, is an important piece of clinical education as students will interact with a range of patients with various cultural backgrounds.

One participant said,

My preceptor and I have talked a lot about cultural competence and how to expand on it. For example, I wasn't sure if I was allowed to actively look at the skin of her knee (because of the cultural standard). I learned that women can view their skin but not men.

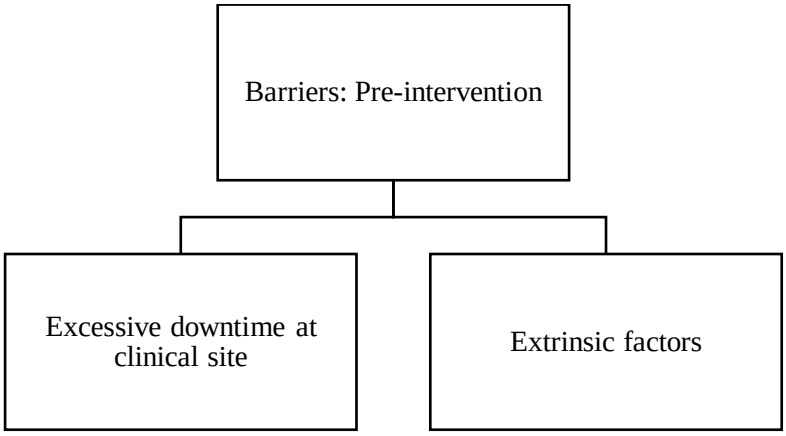
Understanding cultural competence and the value and importance of an ATS will help in difficult situations when students encounter them.

Barriers to IM-Pre-Intervention (Preceptor FB Training)

Several facilitators have been identified in both pre-intervention and post-intervention and have been shown to affect student intrinsic motivation in their clinical setting. Along with facilitators, several barriers were identified through the journaling tasks of the ATS both before and after preceptor FB training. Two identified barriers emerged from the pre-intervention journaling. The themes are excessive downtime at clinical sites and extrinsic factors (Figure 7).

Figure 7

Barriers to IM-Pre-Intervention (Preceptor FB Training)



Theme 1: Excessive Downtime at the Clinical Site

The first theme that emerged from student journaling relative to barriers to internal motivation was excessive downtime at the clinical site. One student stated,

> Unfortunately there are no sports practicing during the mornings, which is the only time I am available to come to in due to my work schedule. I sit in the training room waiting and hoping for patients to show up. It is incredibly frustrating.

Clinical rotations are based on an academic calendar while team/athletic seasons are not well aligned with this schedule. Therefore, the pace within an athletic training rotation may be inconsistent. This will lead to some periods where there are few clinical patient care activities. Students having limited access to patients could affect the opportunities to interact and obtain feedback from preceptors. This may affect motivation negatively as the downtime is often seen by students as idle.

Since timing is an issue at a clinical rotation, and if there is no other option for students to come at a different clinical time, students intrinsic motivation may decrease. One patient said,

"This rotation has more downtime than my first, which has been a significant adjustment." Another participant shared a similar perspective, "I have not been given any feedback, granted I have not specifically asked for feedback" in relation to the lack of real-life patient interactions. Despite excessive downtime, some students have generated strategies to attempt to maintain a high level of intrinsic motivation. One participant stated, "I'm going to continue asking questions and picking my preceptor's brain on athletic training topics and showing my willingness to learn something new every day." Although many students discussed that "they didn't feel like pulling out textbooks because it's not a good use of time," some found alternative strategies stating, "After today, I am going to use my downtime more productively to ask my preceptor questions or work on assignments while I have access to a professional for questions." The ability of students to engage in conversation and obtain feedback from the preceptor even when the patient care flow is low is an important part of clinical education. Preceptors should continue to challenge students and create opportunities for students even if they are unable to engage with patients during that clinical time.

Theme 2: Extrinsic Factors

In addition to excessive downtime in the clinical rotations thereby limiting real-life patient care opportunities, extrinsic factors were also identified as barriers to intrinsic motivation. These factors tend to be out of the control of the preceptor but still affect feedback and ultimately intrinsic motivation. Two main constructs emerged within extrinsic factors: timing of rotation and distance to the facility.

The timing of the rotation involves the period of time within the semester when the student completes the assigned clinical rotation. It was discovered in this analysis that intrinsic motivation varied depending on which part of the semester the student was engaged in their

clinical rotation. When asked if more or less motivated, one student said, “Less motivated to go to now just because it is the end of the semester. The rigor of exams and schoolwork makes it hard to be motivated to go to clinical after a lot of hours in the classroom.” Although out of the control of the preceptor and ATS, one’s willingness to accept feedback during times in the semester when overwhelmed is certainly a factor. Another student said when asked if they were more or less motivated to go to their clinical rotation near the end of the semester, that they were “less [motivated] only because I am just tired, and practices are early, but it had nothing to do with the rotation itself.” Preceptors are encouraged to actively engage students to keep them motivated, even if there are extrinsic factors that emerge in the clinical setting.

The other extrinsic factor influencing IM was the distance to their clinical facility. This is often uncontrollable as students are required to attend specific clinical rotations that meet accreditation guidelines. One participant said,

> It is not that I don’t love being there, this has by far been my favorite clinical site. I just hate the drive and that alone is what makes me unmotivated. I spend two hours a day driving. In those two hours, I could be doing something more productive.

Another student indicated, “The commute makes me miserable.” The distance from their home to the clinical site is an extrinsic factor that is hard to change but should be considered to affect a student’s motivation to attend their clinical site.

In addition to timing and distance, placement alignment also emerged as a barrier from student journaling. Accreditation guidelines require that students be exposed to a variety of clinical settings (Diakogeorgiou et al., 2021). However, if a student is placed at a clinical rotation that they are not interested in or that they have no desire to pursue as a career setting it can affect their motivation to want to continue going. One student discussed the alignment by saying, “I am

being burnt out from this placement. I don't feel like it aligns with my goals and therefore doesn't offer me any more growth opportunities." Another student, when asked if they were more or less motivated to attend their clinical rotation stated, "less due to the fact that the setting is not ideal to my future plans." They did not see the value in that venue therefore made them less motivated to attend.

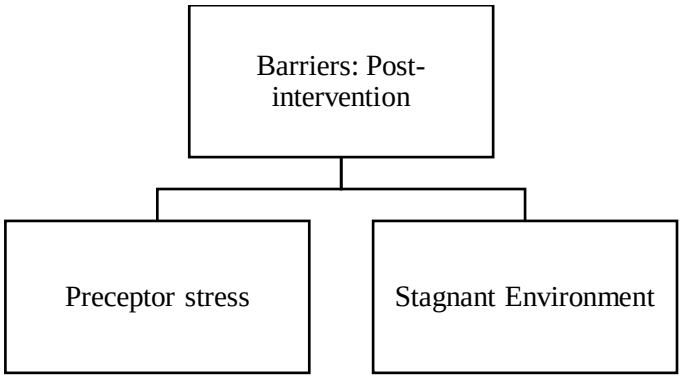
Extrinsic factors, when in relation to preceptor feedback, are often hard to change but affect ATS intrinsic motivation. Understanding that these factors can have an impact on the ATS in their clinical rotation should be considered as a barrier to ATS intrinsic motivation. Preceptors and clinical coordinators should be aware of these barriers and work to help ATS overcome them to continue to be intrinsically motivated.

Barriers to IM-Post-Intervention (Preceptor FB Training)

Before the Preceptor FB Training, students were primarily concerned with barriers related to excessive downtime and extrinsic factors such as timing, location, and alignment. Following intervention with preceptors, new barriers emerged: preceptor stress and stagnant environment. Figure 8 shows the emergent themes.

Figure 8

Barriers to IM: Post-Intervention (Preceptor FB Training)



Theme 1: Preceptor Stress

Preceptor stress appears to be a barrier to intrinsic motivation post-intervention. Although this theme remained mostly positive, preceptor stress was found to influence feedback and intrinsic motivation. The stress of a preceptor can play a crucial role in the development in a student as it may create a tense environment which may discourage students from asking questions and interacting with their preceptor at their clinical site. The ability of a student to feel comfortable with asking questions to their preceptor and interact when they may be stressed may not only help the student but may help the preceptor with evaluations. A student stated,

> I have focused on asking open-ended questions to my preceptor. I find that when I ask open-ended questions related to professional experiences, strategies, or opinions I can have a meaningful and in-depth conversation. Sometimes a yes or no question can get "glanced over" and lose some of its purpose/value.

Another student discussed the importance of questions by saying "[they will] ask more questions, get more involved in injury eval." This could lead to students not feeling motivated because they are not getting the attention/feedback needed to remain motivated in a clinical rotation.

Theme 2: Stagnant Environment

When preceptor stress elevates, students tend to be less motivated. It was noted that even after interventions discussing best practices in preceptor feedback, a stagnant environment could still evolve. The preceptor should continue to challenge students in their clinical rotation despite extrinsic factors that may limit intrinsic motivation. One student noted, "My preceptor has been really stressed these last weeks, but she does a good job at offering me opportunities to learn and give me grace when I'm not sure what to do." A student who is in a stagnant environment may not practice clinical skills needed to continue to progress in the program which creates an

unhealthy learning environment. One participant said, “It is nearing the end of the semester and there is not much going on.” Another one said, “I want to get out of the daily routine the ATR [athletic training room] seems to be in. It’s stagnant and it's hard to learn in a stagnant environment.” Students expect ongoing engagement, and it is the responsibility of the preceptor to facilitate an active learning environment. One student discussed, “There hasn’t been a lot of injuries but when there has they have let us take the lead for evals and rehabs.” Another student noted “less [when asked if they were more or less motivated to attend clinicals] but because it is nearing the end of the semester and there is not as much going on.” If there are no patients for students to interact with, it is a challenge for them to receive feedback about what they are doing well and what they should be improving on. This stagnant situation creates a lack of feedback.

Another participant noted, “There has been minimal feedback” when asked what kind of feedback was given to them in the second half of the semester. The lack of feedback in a stagnant environment can be a problem for students in their clinical rotation. A stagnant environment appears to also decrease any potential elaboration on preceptor feedback. Many of the participants stated that there was a failure to elaborate on feedback given to them which created an environment where they were less motivated to attend their clinical rotation. Elaboration of feedback in a stagnant environment can be avoided by creating opportunities for students to practice clinical skills even if they are not seeing patients and providing feedback on the skills.

Summary

Quantitative data analysis along with qualitative data can be used to understand what intrinsically motivates students in their clinical education. It was determined that there was a decrease in interest/enjoyment, perceived choice, and value/usefulness. Based on the qualitative

data, the barriers of excessive downtime, preceptor stress, extrinsic factors, and a stagnant clinical environment may influence this decrease in intrinsic motivation.

The subscales of perceived choice, effort/importance, pressure/tension, and relatedness were shown as the ATS intrinsic motivation maintained throughout the clinical rotation. Facilitators that can be related to the intrinsic motivation staying the same could be autonomous practice, transition to practice, culture competence, and workplace culture and setting. All of these facilitators were shown as factors that related to the ATS intrinsic motivation. Many of the students identified, through the themes, how feedback from their preceptor motivated them to continue to attend their clinical rotations and how the nature and timing of the feedback played a valuable role in the intrinsic motivation of the student. Preceptor feedback is a valuable piece of athletic training clinical education and should continue to be encouraged for the future of athletic training education.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Review of the Study

The purpose of this mixed-methods study was to identify if preceptor feedback affects athletic training students' intrinsic motivation. Student motivation is a key component to students completing their athletic training degree and pursuing a certification in athletic training (Dodge et al., 2009; Mazerolle et al., 2013; Peer & McClendon, 2002). Preceptors within the clinical program are responsible for giving feedback to the students about clinical and professional skills and behaviors, to ensure that the student is completing the task and applying the didactic and clinical education material in the clinical setting. Effective and regular feedback reinforces good practice, promotes self-reflection, and motivates the learner to work towards their desired outcome (Burgess et al., 2020). Preceptors are responsible for providing feedback to ATS during their clinical education experiences, which has been described as one of the most important characteristics of clinical education in athletic training, medicine, nursing, and physical therapy (Nottingham & Henning, 2014a). Intrinsic motivation related to preceptor feedback during their clinical education experience was a key piece in this study. Intrinsic motivation is malleable and can affect be affected by preceptor feedback. "Although negative feedback may inherently contain a message of unsatisfactory performance that threatens intrinsic motivation, a wide range of other elements within a negative feedback message ultimately benefit students' motivation" (Fong et al., 2019, p. 123). Fong et al. (2019) also determined that intrinsic motivation can be reduced by negative feedback. Preceptor's feedback and delivery to an ATS can have impact on the intrinsic motivation of that student. Understanding how preceptor feedback impacts an athletic training student's intrinsic motivation drives improvement in preceptor feedback in the

clinical setting which enhances the future of athletic training clinical education and preceptor training.

This study was conceptualized in the context of two related theories: Self-Determination Theory and Learning (OPTIMAL) Theory. This dual theoretical framework was utilized to not only understand self-determination theory and what motivates the ATS's intrinsic motivation, but also to explore the OPTIMAL theory and how feedback about skills affects the ATS intrinsically as well. Understanding preceptor feedback and how it impacts the student's intrinsic motivation was the driving factor for applying these theories. Through this theoretical lens using SDT, we can understand what motivates students in their clinical education rotation. This theory was applied to this study by utilizing the Intrinsic Motivation Inventory (Ryan & Deci, 2000b). Results of the study identified pre- and post-intervention IMI scores after preceptor feedback intervention was administered. The conceptual framework guided the results and aided the integration of other healthcare and education programs to address the problem of practice by identifying ATS's intrinsic motivation.

Through phenomenological inquiry, facilitators and barriers were identified that were shown to have an impact on the ATS intrinsic motivation in their clinical rotation. The results of the IMI showed while students were intrinsically motivated from the start, there was an identified statistical decrease from pre- and post-IMI in interest/enjoyment, perceived choice, and value/usefulness. Barriers could be identified as reasons that the IMI decreased throughout the clinical education rotation.

It was found that interest/enjoyment decreased from pre to post-intervention. Barriers that were identified by ATS that may be related to this change in interest/enjoyment in the clinical setting were excessive downtime at the clinical rotation preceptor stress, and placement

alignment. Understanding what intrinsically motivates an ATS in their clinical setting is imperative to the student's innate curiosity and desire to learn (Orsini et al., 2015). By understanding the barriers identified by students, we can understand the relationship that it had with the ATS intrinsic motivation. Orsini et al. (2015) identified that learning material must be relevant and interesting for students, and if students are "uninterested that vertical integration incorporating clinically oriented approaches and early patient contact, could make basic knowledge useful and meaningful" (p. 4). Athletic training students in clinical education may not be interested in the content that is being evaluated that day, such as clinical competency, which could contribute to their interest/enjoyment decreasing.

Excessive Downtime

ATS attend their clinical site regularly and can experience excessive downtime if no patients are coming into the athletic training facility. Participants in this study discussed how a lack of patient interaction and seasons ending affected their motivation to attend clinical rotations. A related study found that "time, when people were not engaged in learning activities, was viewed as a challenge by our participants, as they described a clinical that was lacking volume or consistency in learning opportunities" (Singe et al., 2020, p. 22). Preceptors in their clinical site are expected to keep students busy and provide feedback to students when they are completing a task or doing an evaluation. Singe et al. (2020) found in their study that "our participants shared concerns with the quality of clinical education hours, particularly related to time spent unengaged despite being physically present" (p. 24). This is a challenge if a team does not have a practice scheduled, or a season ends, and the volume of athletes changes.

Preceptors are health care providers first which can be challenged with balancing that and feedback to students. Preceptors often have dual roles as they are an athletic trainer first, and

then are a preceptor where they provide supervision to students. Preceptors working with athletes, or not having athletes come in due to the timing of the season, may create excessive downtime as the student may not have patients to work with. This can pose a challenge as the expectation is to provide care to their patients along with providing ongoing and consistent feedback to their students.

> Feedback has been highlighted as important to the overall learning experience therefore, student learning has the potential to suffer in instances where preceptors are unable to provide adequate feedback because of conflicting roles; limited interactions with preceptors have also been shown to decrease clinical integration, which has implications for socialization and persistence of ATSs. (Dodge et al., 2014, p. 33)

The ability for preceptors to continue to interact with ATS in their clinical rotation by providing rich feedback and being present and communicating with their ATS is valuable to motivate them intrinsically in their clinical rotation. Preceptors should consider incorporating a discussion with their students at the beginning of the clinical rotation each day to discover what skills/tasks students want to accomplish for that day. At the end of the clinical rotation for the day, preceptors should debrief with the ATS what they did during the day and what they could have done better.

Preceptor Stress

Participants identified their preceptor was often stressed when they attended their clinical rotation. In a study by Barrett et al. (2016), students stated that their preceptors and/or professors were experiencing burnout and they could feel it in their didactic and clinical settings. Preceptors who experience burnout in their clinical site may have an impact on the ATS at their site. Dodge et al. (2014) found specifically that a preceptor stated, “The time and effort necessary to be a

good preceptor, although frequently rewarding, was often viewed as upsetting because of the lack of appreciation" (p. 32).

Even though a student may experience their preceptor going through burnout, it gives them a sense of what work-life balance may be like in the future. Barrett et al. (2016) found that preceptor feedback and discussion about behaviors provided students coping strategies to overcome and prepare for the future in athletic training. Preceptors are required to continue to provide feedback to students in their clinical setting and should remain approachable to students in their clinical setting despite work-related stressors. The ability of a student to approach a preceptor can be impactful on a student's motivation. A study in nursing education found that students perceived the approachability of their preceptor as valuable by identifying preceptors "who listened attentively, had good communication skills, and promoted student independence contributed to his/her approachability" (Collier, 2020, p. 3). ATS interacting with their preceptors and receiving feedback about skills being assessed in their clinical rotation can impact an ATS and their intrinsic motivation.

Placement Alignment

Some participants in this study discussed that their clinical placement did not align with the future direction they wanted to go professionally as a barrier to their intrinsic motivation. Even if a student is not engaged in the selection of the clinical site due to the location, they are still required to complete their clinical education. One participant talked about the value of the preceptor at the clinical site providing feedback to continue to engage with the student, even though they had no motivation to attend that site due to the placement not aligning. For example, a student has a desire to work in a collegiate setting but must complete a clinical rotation at a high school. This misalignment creates a challenge relative to intrinsic motivation for some

students. Students who identify their clinical placement alignment as a barrier can work to overcome the barrier by communicating with the clinical educational coordinator to address this barrier to their intrinsic motivation to improve it for the future.

Understanding the barriers of intrinsic motivation and excessive downtime in the clinical site, preceptor stress, and placement alignment qualitatively gives a better understanding of what preceptors can do in the future to influence the ATS's intrinsic motivation in their clinical rotation. Interest/enjoyment was shown to decrease after the intervention was implemented, which could have been related to some of the barriers discussed by students. In the future, more education on these barriers to preceptors should be incorporated.

The IMI subscale of perceived choice was also shown to decrease following preceptor intervention. In athletic training education, ATS interact with preceptors to obtain feedback about skills that they are conducting that day. A study conducted by Orsini et al. (2015) identified ways that choice can be affected in a clinical environment. They found when students had autonomy in their clinical setting, they felt comfortable (Orsini et al., 2015). They also found that "an environment that provides choices and freedom for students also needs them to take more responsibility in their learning process, which has been shown to stimulate students' motivation" (Orsini et al., 2015, p. 7).

Students who do not have the perceived choice to make autonomous decisions in their athletic training clinical education and do not obtain preceptor feedback can be impactful affecting intrinsic motivation. Mazerolle and Dodge (2015) identified autonomy as a factor of intrinsic motivation for athletic training students by finding that students looked to preceptors to identify and/or create learning experiences that allowed for supervised autonomy. The literature can relate to the findings of this study by identifying that the clinical environment and extrinsic

factors that are out of the preceptor's control, such as environment and lack of autonomy, can have an impact on the ATS intrinsic motivation. By giving students the autonomy and choice to make guided decisions in a clinical environment while providing feedback and creating an environment where the student feels valued and not afraid to ask questions to their preceptor, ATS intrinsic motivation can be improved.

Extrinsic factors were found to be barriers to ATS intrinsic motivation in this study. The barriers can relate to the decrease in perceived choice that ATS identified as barriers. These barriers were collectively grouped as considerations that were out of the control of the student relative to their clinical rotation. In this study, participants identified extrinsic factors such as distance to the facility and feeling burnt out due to the end-of-the-semester responsibilities. In support of the extrinsic factors serving as barriers to ATS intrinsic motivation, another study found that academic workload can affect burnout in students (Elliot et al., 2023). While the distance to the facility was identified as a barrier to ATS's intrinsic motivation, the feeling of being burnt out due to the end-of-the-semester responsibilities was also identified.

Burnout due to the end-of-the-semester responsibilities was another barrier that was identified by ATS. ATS are responsible for maintaining a minimum of clinical hours a week needed to progress through their clinical education. This can put stress on the students as they are still required to complete homework, projects, and final examinations. Stress, if not identified and taken care of, can lead to burnout in their clinical education. Participants in this study discussed extrinsic factors as a barrier to intrinsic motivation and preceptors should be aware to incorporate communication with students about how to overcome these barriers.

Additionally, the value/usefulness subscale of the IMI also had a decrease in post-intervention scores. A study by Clason et al. (2023) discovered that "when students'

motivation is more internalized and they are working to meet their personal goals, they feel less pressure to perform for others, facilitating successful academic performance" (pp. 169–170). They also identified that preceptors may increase motivation and perception of performance by "encouraging personal enjoyment and value in athletic training activities" (p. 170). The findings in this study saw a decrease in the subcategory of value/usefulness. Identifying ways that athletic training students can incorporate value into their clinical practice by providing feedback and interaction with the student could have an impact on their intrinsic motivation. The impact of the perceived value/usefulness of the clinical rotation and the preceptor's ability to provide feedback to the student are important elements in the intrinsic motivation of the athletic training student.

Qualitatively, it can be understood that there is a relationship between value/usefulness and the barrier of a stagnant environment that affected the ATS intrinsic motivation. A study by Welch Bacon et al. (2022) identified the impact that a clinical setting can have on an athletic training student. It was discussed that ATS addressed that "more than half the time spent at clinical experience was unengaged" (p. 641). The ability of ATS to stay engaged in a clinical setting, even if there is little patient interaction, was identified as a barrier to intrinsic motivation. Benes et al. (2014) also found that "ATS's feel frustrated and less integrated when engaged in activities that are considered as wasting time or menial" (p. 157). ATSs being engaged in their clinical rotation and interacting with their preceptor is a crucial part of clinical education and preceptors should continue to engage students by providing case studies or mock evaluations when the clinical environment becomes stagnant. A study in nursing education found that simulating patient evaluations was identified as a motivation push for students (Nakayoshi et al., 2021). The same type of simulation can be incorporated in athletic training education to simulate patient interaction for athletic training students. By providing the ATS with scenarios of injuries

or mimicking an evaluation, this can provide simulation-like opportunity for the ATS to continue to progress appropriately.

The remaining subscales showed a maintenance of intrinsic motivation, possibly due to several facilitators. They are *active communication, autonomous medical practice, theory to practice, workplace culture and setting,* and *the nature of feedback.* These subscales are analyzed in the following paragraphs.

Effort/importance when related to ATS intrinsic motivation remained consistent after the intervention was implemented. Preceptor feedback to students is important to reiterate to the student that they master the skills within their clinical education or need modifying and changing. *The nature of feedback* was a facilitator that was identified from ATS. Preceptor feedback to athletic training students in the clinical rotation is valuable as it allows interaction between the student and preceptor and creates an environment to enhance clinical skills. "Feedback acts as a continuing part of the instructional process that supports and enhances learning" (Burgess et al., 2020, p. 1). Effort/importance when related to ATS intrinsic motivation was found to have an integral impact on clinical education.

A study found that the ability of a preceptor to give honest feedback to ATS in their clinical setting was valuable to them to guide them during their transition period to a professional (Walker et al., 2021). The nature of the feedback to a student is an important aspect of clinical education. "Preceptors interact with their students in the clinical setting by providing feedback about the skills that they are mastering throughout their rotations and their performance and seeking feedback on their feedback skills from learners, peers, and/or trusted colleagues" (Orsini et al., 2022, p. 6). Incorporating feedback allows students to reflect on the clinical experiences that they are completing daily and also allows them to improve skills when needed. Clinical

experiences aid the student's transition to practice and are valuable in assisting them in mastering their clinical skills. Orsini et al. (2022) also identified that "giving constructive feedback is crucial for learners to bridge the gap between their current performance and the desired standards of competence" (p. 1). The participants in this study along with literature from other studies help to understand what facilitators from preceptor feedback affect athletic training student intrinsic motivation.

Effort/importance can also be related to self-efficacy or belief in one's capability to perform a given task successfully and has been correlated with the amount of effort one puts into activities and how long one will persist when facing difficulties (Clason et al., 2023, p. 164). Effort/importance when analyzed by preceptor feedback can have an impact on ATS motivation. Preceptors providing feedback to students may increase the interest/enjoyment subscale over time and increase the ATS intrinsic motivation in their clinical education setting.

Along with effort/importance, the nature of feedback can also relate to the subscales of pressure/tension and relatedness. Facilitators that were identified by ATS that influenced their intrinsic motivation were *active communication*, *autonomous medical practice*, *theory to practice,* and *workplace culture and setting*. Preceptors should understand the importance of debriefing and allowing athletic training students to reflect on their evaluations and clinical education. This relates to the ATS decreasing their pressure/tension as they are comfortable with talking about what they are doing well and what they need to improve on in relationship to the skills being completed. "Debriefing after patient care encounters has been shown to increase critical thinking, confidence, clinical skills, and clinical reasoning" (West et al., 2018 p. 2). Additionally, Orsini et al. (2015) discussed the importance of identifying what went well with students in relationship to their clinical skills and intrinsic motivation. Pressure/tension was

perceived to remain consistent from the pre- to post-IMI and after the preceptor feedback intervention was implemented.

A main component of SDT and an aspect that has relationship between the ATS and their intrinsic motivation is relatedness. Relatedness is one of the main components of the SDT and is important to create in students. “Students must feel connected with teachers and peers to achieve autonomous self-regulation” (Orsini et al., 2015, p. 7). Preceptors should create a mentorship bond with their athletic training students to help them feel related. Mazerolle and Dodge (2015) discussed the impact of preceptor and student mentorship by stating, “the development of interpersonal relationships between student and preceptor allows preceptors to understand the clinical needs of individual students and adjust the learning experience accordingly” (p. 143). The preceptor providing feedback to students and creating meaningful relationships with their students align with the relatedness of the intrinsic motivation of athletic training students. This practice should continue to be encouraged from a clinical education perspective. Understanding and relating facilitators and how they relate to the consistent intrinsic motivation of an ATS is a valuable component for preceptors to consider. Active communication and feedback can relate to the subscales of perceived competence, effort/importance, and pressure/tension. The ability of a preceptor to effectively communicate by providing feedback to their ATS in their clinical education can improve the ATS's intrinsic motivation.

Active Communication is a significant aspect of ATS intrinsic motivation within their clinical education as preceptors interact and communicate with ATS about their skills. Preceptors should be diligent and provide active communication to their student in their clinical rotation about the improvement of the skills that are being practiced and mastered. Open and active communication creates an environment where students can feel comfortable asking questions for

improvement of clinical skills (Eiroa & Konin, 2021). Open and active communication aids the ATS in their clinical education transition to a professional athletic trainer and can improve the ATS's intrinsic motivation. By discussing goals daily with students at the beginning of their clinical rotation along with debriefing opportunities at the end of the clinical rotation may aid in better active communication with the preceptor and ATS.

The ability of a preceptor to provide active communication promptly can be beneficial to the ATS and relate to their intrinsic motivation. A study found that preceptors who communicate expectations early and often take time to actively instruct the students in their clinical rotations (Nottingham & Kasamatsu, 2018) were identified as impactful to students. Participants in this study identified how their preceptor feedback impacted their intrinsic motivation. Preceptors work with students to provide feedback about skills and evaluations that they are completing in their clinical education. Dodge and Mazerolle (2015) also found preceptors are encouraged to be open about communicating with their ATS under their supervision. This is important as active communication from their preceptor was identified by ATS in this study as having an impact on their intrinsic motivation.

Along with active communication, *Autonomous Practice,* as identified as a facilitator may correlate with the consistent intrinsic motivation that was maintained by ATS in their clinical education. Allowing athletic training students to gain autonomy in their clinical site was identified as an intrinsic motivator to students. Although governed by state practice acts to work under the direct supervision of a certified athletic trainer/preceptor, athletic training students are afforded a degree of autonomy to practice and apply skills for patient care. Participants in this study discussed autonomous practice and how it impacted their intrinsic motivation. Autonomous practice can also relate to the SDT theory as one of the main components is

autonomy. SDT encourages allowing the student to move away from direct supervision to independent autonomy (Sawatsky et al., 2022). The type of feedback from preceptors can integrate supervision and autonomy support in the clinical setting, while also motivating the learner to make decisions with hands-on approaches to supervision from preceptor (Sawatsky et al., 2022). It was identified by ATS in this study that preceptors allowing students to practice autonomously are connected to their intrinsic motivation in their clinical setting.

Autonomous medical practice in the clinical setting was found to have an impact on the ATS intrinsic motivation. In a study by Kusurkar and Croiset (2015), it was identified that autonomy support in medical education can enhance the motivation of students and provide autonomy-supportive in their future medical practice and teaching. Preceptors allowing athletic training students to practice autonomously while still giving feedback was identified as impactful to the student and their future. In a specific athletic training study, researchers discuss how the readiness to practice autonomously can be accomplished by providing students with diverse experiences in their clinical setting with their preceptor (Bowman et al., 2017). Autonomous clinical practice, as identified by students as a facilitator of their intrinsic motivation, has been found effective in medical and athletic training literature and should continue to be incorporated by preceptors. Autonomous medical practice has shown to be impactful to ATS intrinsic motivation as it encourages students to gain confidence and master skills while transitioning to a medical professional.

Theory to Practice can also be related to autonomous medical practice as it prepares the ATS for transition. Participants in this study identified factors such as learning from their preceptor's life experiences and how they related to their future as an athletic training professional as central components of intrinsic motivation. Preceptors in athletic training clinical

education are expected to aid in bridging the gap between didactic and clinical education. Athletic training education, much like nursing, relies on preceptors to help students to bridge the gap. A study in nursing education identified the "preceptorship model of clinical teaching supporting nursing students during their clinical placements, as integral in the incorporation of theory and practice" (Rosli et al., 2022, p. 111). Theory to practice allows athletic training students to obtain preceptor feedback about how to incorporate didactic education in the clinical setting for patient care. This is a valuable piece to the intrinsic motivation of students as they are learning how to connect the two components.

Participants in this study also discussed how their preceptor affected their intrinsic motivation by helping them gain confidence in their ability to practice in their clinical rotation. This is a valuable piece of clinical education that is impactful to perceived competence, effort/importance/pressure/tension, as it prepares the ATS for a future in the athletic training field as a professional. The role of motivation in nursing students was also found essential as, "students expressed that they learn best in an environment that encourages collaboratively learning, trust and mutual respect aids in the motivation of their clinical site" (Amimaruddin & Ruditaldris, 2022, p. 33). The ability of the preceptor to allow the ATS to gain confidence in their clinical education can relate to the theory to practice as it is an important aspect of healthcare to allow students to connect didactic and clinical education. Preceptor feedback and encouragement of how to connect the skill components is a facilitator to intrinsic motivation for athletic training students should continue to be developed in preceptor training programs.

When considering the facilitators that were identified by ATS, they also identified *Workplace Culture and Setting*. Workplace culture and setting is the environment that they are in constantly in their clinical rotation. The culture and setting of the clinical site are important

factors in how the student progresses in their skill mastery along with the feedback from the preceptor. Participants in this study identified how interactions with athletes and their preceptors affected their clinical motivation. Preceptors play a pivotal role in athletic training student development as they serve as the primary facilitators of student learning during clinical experiences and ensure optimal learning outcomes for students (Huett & Wessel, 2022). Feedback from preceptors to ATS helps to progress the student in their clinical education and their interaction was shown to have an impact on their intrinsic motivation.

Preceptors provide opportunities to students during their clinical experiences by articulating feedback to students on the task that they are completing at that time. A study by Hyland et al. (2020) found that "participants described various approaches to create an ideal learning environment and culture including integrating ATS into real-life experiences and engaging students in guided self-reflection" (p. 105). Clinical education is intended to provide an environment where students connect the didactic education and integrate it into real-life experiences (Eldred et al., 2021). In this study, it was found that when preceptors allow the students to experience real-life experiences while providing feedback to the student is an identified facilitator that is important for the intrinsic motivation of that student. This is valuable to clinical education as real-life situations and autonomous medical practice create a positive and impactful workplace culture and setting that is helpful to aid in the transition to practice for the ATS. This also can be related to the ATS maintaining the same intrinsic motivation throughout the clinical rotation.

Communication and feedback have an impact on the culture and setting that an athletic training student attends regularly. Hyland et al. (2020) discovered that "creating and modeling honest communication, even within difficult and uncomfortable conversations, further facilitated

this environment" (p. 110). A previous study suggested that "second-year professional master's athletic training students need positive clinical experiences and strong facility and preceptor support to develop positive perceptions of the profession and a career in the profession" (Nokes et al., 2022, p. 61). This study found similar results as the clinical experience had an impact on the ATS intrinsic motivation. The ability of the preceptor to interact and provide feedback to the participant in their clinical setting was identified by participants in this study as a facilitator. One participant in this study identified the nature of feedback given by their preceptor. They stated, "He teaches by throwing me in the fire and that teaching method plus valuable and timely feedback has created an environment where I love to go learn." This interaction creates a culture where they can progress in the clinical setting which is identified as a facilitator of student intrinsic motivation. Along with workplace culture and setting, it is also important to consider the identified facilitator of the nature of feedback.

Within the workplace culture and setting, preceptors are responsible for giving feedback to the ATS in the clinical setting. As discussed previously, the *nature of feedback* in the clinical rotation is given in a variety of ways. The nature of the feedback to a student is an important aspect of clinical education and an integral piece of the workplace culture and setting. Preceptors work directly with ATS to provide feedback immediately as well as in an evaluation setting to aid in the improvement of the student. The participants in this study allowed for an understanding of what facilitators from preceptor feedback affect athletic training student intrinsic motivation. Understanding facilitators and barriers and how they relate to the IM as analyzed by the IMI is an important aspect of the ATS growth and progression in their clinical education.

Contributions of the Study

This study looked at ATS intrinsic motivation throughout a continuum from before the preceptor intervention until after it was administered. The conceptual framework of Self-Determination Theory and Learning (OPTIMAL) theory was explored utilizing the IMI for ATS. These results, along with the journaling and feedback from students, provide a better understanding of barriers that contributed to the post-IMI being significantly lower in some categories so that athletic training program can create solutions for athletic training programs to improve these barriers if possible. This will provide new perspectives on clinical education in the future.

There is little research on intrinsic psychosocial aspects that may be relevant to student motivation in athletic training research (Clason et al., 2023). There were studies identified by psychology, nursing, education, and other healthcare professions that contributed to a better understanding of how intrinsic motivation was valued and identified by students, although there were no studies conducted on how the IMI can be used in athletic training education. This study focused on understanding how MSAT students perceive feedback from their preceptor and how it intrinsically motivates them in their clinical rotation using the IMI. During their clinical rotation, MSAT students utilize feedback from their preceptor to determine if skills are being completed accurately. This feedback is given either verbally and immediately while completing the skill, or at a later date by written evaluation from their preceptor. It was found that on average, ATS were intrinsically motivated at the start of the semester and maintained the intrinsic motivation throughout the semester while three categories were found to have a statistical decrease. Within the IMI, facilitators and barriers were identified to affect the ATS intrinsic motivation by the participants in this study and relate to the conceptual framework.

This study also focused on student journaling to better understand students' perceptions of the feedback from their preceptor, while facilitators and barriers were identified. The feedback that the students provided is crucial as it gives insight into areas of improvement and ways that ATS intrinsic motivation is affected in the clinical setting by facilitators and barriers. It was also found that some of the barriers that were identified had little correlation between preceptor feedback and the ATS intrinsic motivation. Some of the barriers that were identified were extrinsic factors that had no relationship to preceptor feedback. Based on the findings of this study, and what facilitators and barriers intrinsically motivate ATS in their clinical setting will help future ATS to have the opportunity to interact with their preceptor differently by identifying ways that feedback can be improved from the preceptor to the student. It also allows clinical education coordinators the opportunity to create improved preceptor training and gives insight to ways to improve preceptor feedback in the clinical setting. This also will help the student to gain confidence in autonomous practice and prepare for the transition to practice for the ATS in the future.

As an educator and preceptor, the findings of this study create an understanding of how feedback from a preceptor intrinsically motivates a student. The ability of an athletic training program to educate preceptors on student self-evaluation, feedback from the preceptor, and life-long learning may be beneficial for the students in their clinical practice. Preceptor training opportunities should educate preceptors on ways to give effective feedback to students by providing mentorship while creating opportunities for autonomous practice. Preceptors should also communicate with students about their goals for the semester, both short-term and long-term, and provide feedback on ways to achieve those goals. These findings will contribute to the future of athletic training education and the future of athletic training clinical sites.

Implications for Practice

This research study can be used for the future of healthcare professionals who utilize preceptors for their student's education, specifically in athletic training education. Facilitators and barriers that were identified in this study can be utilized to understand how preceptor feedback in the clinical setting impacts a student's intrinsic motivation in that setting. By understanding and utilizing this information, athletic training programs can create or add to previously created preceptor training to encourage them to utilize some of the feedback practices discussed in the preceptor training intervention.

The results of this study focused on providing insight into the intrinsic motivation of an ATS in their clinical setting. Ideally, it is important for the ATS to utilize intrinsic and extrinsic motivation, with the main components being made of up the intrinsic motivation that allows the student to complete tasks because they want to, not because they are being told to. The implementation of the IMI along with the qualitative journaling questions helped to give insight into how the student rates their intrinsic motivation at the pre-and post-preceptor training intervention. The students shared insights as to why there may have been a decrease in their scores due to barriers that were explained from their perspective. These barriers should be explored further to better understand if there is improved feedback for the student and improve the preceptor training at the beginning of the semester.

This study can give insight to clinical education coordinators on ways that ATS value intrinsic motivation in their clinical education. Intrinsic motivation is malleable and should be considered when understanding how preceptors can influence intrinsic motivation Utilizing the facilitators that were identified in this study can also help future preceptors understand how they can relate to their students and what type of feedback practices are most useful. Understanding

what type of feedback motivates a student intrinsically as well as other factors that were identified in this study helps to advance the student in their clinical education. Clinical education also gives a student the ability to master their skills while working with a diverse population and gaining autonomous decision-making opportunities while working alongside their preceptor. Using the facilitators and barriers identified in this study can be valuable for the future of athletic training clinical education and should be considered for future research.

Limitations and Recommendations

One limitation of this study was that the IMI was created using a Likert scale. Likert scales, because they are interpreted differently by each individual, can be scored differently by each student. Even though there can be different interpretations, the Likert scale is still reliable and valid (Jebb et al., 2021). It also is important to understand that each student goes through their clinical rotation differently and their feelings toward the clinical rotation may have changed as the rotation went on throughout the year, for a variety of reasons. These Likert scales are open for interpretation and should be considered when observing the scales from each student. It also was determined from the Likert scale that ATS were already intrinsically motivated, potentially creating a ceiling effect which allows for improvement to identified for future research.

Another limitation of the study is open-ended interviews and journal questions may have been misunderstood and/or misinterpreted by the participants. This was minimized by ensuring that the questions were straightforward and appropriate by having committee members check that the questions were valid. Students may have been hesitant to answer honestly to the questions for fear that their preceptor may get the feedback that was discussed despite the promise of anonymity. These limitations should be considered for the sake of this study. Future research should utilize these changes to improve their study.

Another limitation was the low response rate at 20.5%. Ideally, it would be impactful to encourage more participants to be involved in the research to obtain a variety of clinical settings and MSAT program deliveries to better understand what intrinsically motivates students in their clinical environment. Including other MSAT programs will give a rich understanding of the intrinsic motivation that is affected by preceptor feedback.

The last limitation of the study was that there was no feedback from the preceptors identified. This study focused on the intrinsic motivation of the ATS and did not determine any feedback from preceptors about intrinsic motivation or about their intrinsic motivation. This study also did not evaluate how many preceptors watched the intervention.

Future Research Opportunities

There is very little data present on student intrinsic motivation in athletic training students. This study creates more opportunities for future research as it focuses on the student and how preceptor feedback affects the intrinsic motivation of the student in their clinical rotation. Future research can also study what factors motivate the preceptor to give feedback and facilitators and barriers that may affect the preceptor in their job setting. One aspect that could be investigated is how the preceptor feels prepared to give feedback from the preceptor training given to them at the beginning of the semester. This is valuable as it will help to determine other concepts that preceptors feel weak in and will give insight for athletic training programs on ways they can improve their clinical preceptors. Developing new opportunities for athletic training education to ways to investigate intrinsic motivation in the profession can be a valuable piece for the future of athletic training.

Preceptor feedback is an important characteristic that many healthcare professionals and programs focus on but is something often hard to understand. The quantitative data identified

how students were motivated in their clinical rotation. The qualitative data identified factors and barriers that contributed to their intrinsic motivation from their preceptor. Continued research should be considered and implemented to continue to understand the impact the feedback from the preceptor has on the student. Understanding how to implement feedback practices through preceptor training and encouraging preceptors to continue identifying intrinsic motivation facilitators and barriers to ensure to give effective feedback to students should continue to be evaluated and researched.

One of the barriers found in the study was that many extrinsic factors contributed to the intrinsic motivation of the student. This should be considered for further research and should be investigated further. Another barrier was that the student felt stagnant in their clinical rotation. Future research could be conducted by investigating if the student was in between seasons or assigned to a specific clinical preceptor, rather than a clinical site. It should also be investigated if the preceptor was assigned to only one sport and if that had implications for causing the stagnant environment.

Future research could also allow for an opportunity to investigate the intrinsic motivation of specific cohorts of MSAT students. This study did not break the cohorts into specific years, but future research could benefit to understand if the ATS intrinsic motivation changes from an MSAT1 to an MSAT2 student. This research can allow a better understanding if feedback is needed for specific cohorts over others, and which benefits from more autonomy.

For this study, the focus was on the student and their intrinsic motivation in their clinical site, and how feedback from their preceptor affected that motivation. Future research should be conducted and focus on preceptor training and feedback from the preceptors. It is important to understand that the ATS and preceptor but have intrinsic motivation and it is equally important

to understand that the preceptor intrinsic motivation may be affected by certain circumstances throughout the semester. Future research should allow for diving deeper into the preceptor and how their intrinsic motivation changes or is affected, which in turn, may have impact on the feedback given to the ATS. Researching the type of preceptor training that is being conducted for preceptors and the content that is being introduced can help to modify and change the preceptor training and improve it to benefit not only the ATS but the preceptor and prepare them the best opportunity to be a preceptor. It also can be valuable to research the intrinsic motivation of the preceptor and how they perceive the preceptor training as helpful. Preceptor training could also be improved by incorporating the educational faculty in preceptor training to bridge the gap between clinical education and didactic education to benefit not only the student, but to improve preceptor training overall. This also can allow for faculty to give expectations of the student and what information they will be covering during the semester. Identifying the timing of the feedback and the rationale of the type of feedback that is given to students could be valuable to merge with study and create a better learning environment for students. Providing preceptors with ways that they can interact and give feedback promptly and the type of feedback that they are giving could be beneficial to the ATS and the preceptor.

Conclusion

Intrinsic motivation decreased in interest/enjoyment, perceived choice, and value/usefulness based on the pre- and post-intervention IMI. Athletic training students may identify intrinsic motivation differently and have different aspects that help or hinder their motivation in their clinical rotations. It is important to understand what affects a student's intrinsic motivation in their clinical rotation so that the preceptor can work to create a positive learning environment for them. ATS perceptions helped to obtain a better understanding of the

identified themes and how they relate to their intrinsic motivation in their clinical education. While there are no studies conducted on intrinsic motivation in athletic training students, the results of this study were supported by literature on intrinsic motivation in other healthcare professions and education. Facilitators and barriers were identified that contributed to motivation in students and that motivation can change in both a positive and negative direction. It is important to recognize the identified facilitators and barriers to better understand the students and how they can be motivated in their clinical setting. It is equally important to recognize that each ATS is different, and preceptors should be willing to adapt to each student's needs. Educating students on the importance of engagement and intrinsic motivation may be valuable for the athletic training profession in the future.

Brief Overview of CPED Principles

The Carnegie Project Educational Doctorate (CPED) principles are the foundation of the professional doctorate in education (The KSU framework, n.d.). These principles (The KSU framework, n.d.) should be completed to earn a doctorate in education and are as follows:

1. Is framed around questions of equity, ethics, and social justice to bring about solutions to complex problems of practice.
2. Prepares leaders who can construct and apply knowledge to make a positive difference in the lives of individuals, families, organizations, and communities.
3. Provides opportunities for candidates to develop and demonstrate collaboration and communication skills to work with diverse communities to build partnerships.
4. Provides field-based opportunities to analyze problems of practice and use multiple frames to develop meaningful solutions.

5. Is grounded in and develops a professional knowledge base that integrates both practical and research knowledge, that links theory with systemic and systematic inquiry.
6. Emphasizes the generation, transformation, and use of professional knowledge and practice.

The concepts of interprofessional leadership were identified and have many elements that are encompassed in the doctoral program. ATS intrinsic motivation and preceptor feedback both have implications that can affect the athletic training program. Interprofessional leadership is the main concept of this doctoral program and was identified in this study as several constructs were identified. Preceptors in this study work in a variety of settings which allows ATS to learn from professionals other than athletic trainers. Preceptors possess leadership and communication skills that are valuable to ATS in their clinical education. As a preceptor and educator, the leadership skills learned throughout this program and through the CPED principles can not only be utilized throughout this study and for the future of athletic training clinical education, as well as for myself personally and professionally for improvement. The results of this study are intended to involve all stakeholders, students, faculty, and preceptors, and create a positive difference moving forward. The idea behind this research is to examine and provide feedback techniques of preceptors to create change for athletic training students in the future. Future research will be gained from this study.

APPENDICES

APPENDIX A

IMI PERMISSION

Appendix A

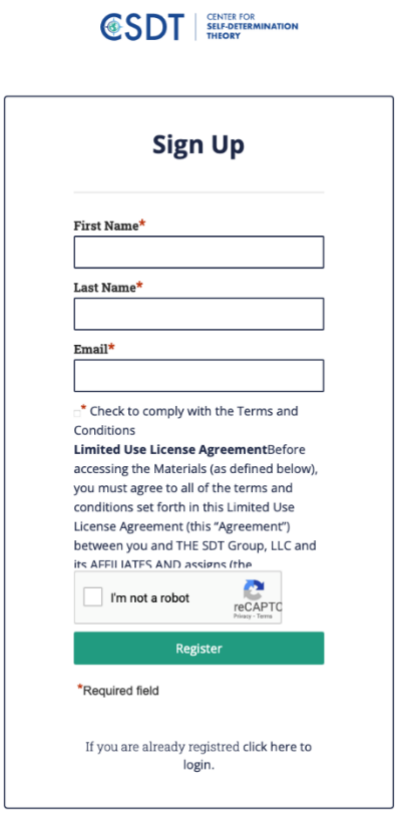
IMI Permission

On behalf of Dr. Richard Ryan and the Center for Self-Determination Theory, you have our permission to use the SDT scales for your academic (non-commercial) purposes.

To access the SDT scales, go to: https://selfdeterminationtheory.org/questionnaires/

1- Select the scale you wish to use.
2- Click where it says “Please Log In to Download”
3- Here, you will need to “Register” (even if you’ve previously registered before) and enter your name and email and accept the terms and conditions.
4- Next you will need to check “I’m not a robot” and then Register.

If it says your email is already registered, try again and use a different email address or adapt your email address slightly and see if this works.



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May 31-June 3, 2023 | Orlando, FL

From: Cummings, Rachel <rchilton@kent.edu>
Date: Wednesday, August 16, 2023 at 1:15 PM
To: Deci, Edward <deci@psych.rochester.edu>,
richard.ryan@acu.edu.au<richard.ryan@acu.edu.au>
Subject: [EXT] IMI Permission for Dissertation
Good afternoon,

My name is Rachel Cummings, and I am a third-year doctoral student at Kent State University. I am working on my proposal for my dissertation and am interested in using your IMI for my study. The title for my study is *Athletic Training Preceptor Feedback Effects on Athletic Training Student Intrinsic Motivation.* I believe that this inventory will help me to complete my dissertation.

Please let me know if I have permission to utilize your IMI. I really have enjoyed reading a lot of your articles and studies on intrinsic motivation. Thank you and have a great day!

Very Respectfully,
Rachel Cummings, MA, AT
Doctoral Teaching Assistant
Athletic Training Program
Kent State University
330-204-6006 cell

APPENDIX B

INTRINSIC MOTIVATION INVENTORY RECRUITMENT EMAIL

Appendix B

Intrinsic Motivation Inventory Recruitment Email

Dear MSAT Coordinator,

My name is Rachel Cummings, and I am a third-year doctoral candidate at Kent State University completing my dissertation. I am asking for your cooperation and to please pass on the email below to your first-year and second-year MSAT students. Student participation will help me to gain data for my study. Thank you!

Dear MSAT Student,

I am writing to let you know about an opportunity to participate in a voluntary research study about Athletic Training Students' Intrinsic Motivation. This study is being conducted by Rachel Cummings, M.A., AT at Kent State University.

Participation includes completing a consent form to partake in the study. Please read the attached Consent Form. You will then be asked to fill out an Intrinsic Motivation Inventory. This inventory will ask questions about your clinical experiences thus far as an athletic training master's degree student. You will also be asked to partake in guided journaling, which will take approximately 10-15 minutes, two times throughout the semester. This will be done via a secured online database and will remain anonymous throughout the study. After the study has concluded, you will be asked if you are interested in completing a 20-minute interview.

This study will focus on Athletic Training Students' Intrinsic Motivation and includes any first or second-year master's degree student enrolled in a program. This study aims to explore and understand what motivates students throughout their clinical experience.

If you want to enroll in this study, please click the link below. All information will be confidential and secure and remain anonymous throughout the study. If you would like additional information about this study, please contact us at rchilton@kent.edu.

https://qualtricsxmdkjfqw5zq.qualtrics.com/jfe/form/SV_9tPnfcvefuOzmZM

Thank you for your consideration, and once again, please do not hesitate to contact us if you are interested in learning more about this Institutional Review Board-approved project.

Very Respectfully,
Rachel Cummings, MA, AT
Doctoral Teaching Assistant
Athletic Training Program
Kent State University
330-204-6006

Note: The information contained in this electronic message and any attachments are intended for the exclusive use of the addressee(s) and may contain confidential information. Please be mindful of provisions of the Federal Family Educational Rights and Privacy Act when using or disseminating private or confidential information.

APPENDIX C

INTRINSIC MOTIVATION INVENTORY

Appendix C

Intrinsic Motivation Inventory

Intrinsic Motivation Inventory (Ryan and Deci, 2000)

Q1 Interest/Enjoyment-Please rate the following statements based on your current clinical rotation.

	1 Not true at all (1)	2 (2)	3 (3)	4 Somewhat true (4)	5 (5)	6 (6)	7 Very true (7)
I enjoyed doing this activity very much (1)	○	○	○	○	○	○	○
This activity was fun to do (2)	○	○	○	○	○	○	○
I thought this was a boring activity (3)	○	○	○	○	○	○	○
This activity did not hold my attention at all (4)	○	○	○	○	○	○	○
I would describe this activity as very interesting (5)	○	○	○	○	○	○	○
I thought this activity was quite enjoyable (6)	○	○	○	○	○	○	○
While I was doing this activity, I was thinking about how much I enjoyed it (7)	○	○	○	○	○	○	○

Q2 Perceived Competence-Please rate the following statements based on your current clinical rotation.

	1 Not true at all (1)	2 (2)	3 (3)	4 Somewhat true (4)	5 (5)	6 (6)	7 Very true (7)
I think I am pretty good at this activity (1)	○	○	○	○	○	○	○
I think I did pretty well at this activity, compared to other students (2)	○	○	○	○	○	○	○
After working at this activity for a while, I felt competent (3)	○	○	○	○	○	○	○
I am satisfied with my performance at this task (4)	○	○	○	○	○	○	○
I was pretty skilled at this activity (5)	○	○	○	○	○	○	○
This was an activity that I couldn't do very well (6)	○	○	○	○	○	○	○

Q3 Effort/Importance-Please rate the following statements based on your current clinical rotation.

	1 Not true at all (1)	2 (2)	3 (3)	4 Somewhat True (4)	5 (5)	6 (6)	7 Very true (7)
I put a lot of effort into this (1)	○	○	○	○	○	○	○
I didn’t try very hard to do well at this activity (2)	○	○	○	○	○	○	○
I tried very hard on this activity (3)	○	○	○	○	○	○	○
It was important to me to do well at this task (4)	○	○	○	○	○	○	○
I didn't put much energy into this (5)	○	○	○	○	○	○	○

Q4 Pressure/Tension-Please rate the following statements based on your current clinical rotation.

	1 Not true at all (1)	2 (2)	3 (3)	4 Somewhat true (4)	5 (5)	6 (6)	7 Very true (7)
I did not feel nervous at all while doing this (1)	○	○	○	○	○	○	○
I felt vert tense while doing this activity (2)	○	○	○	○	○	○	○
I was very relaxed in doing these (3)	○	○	○	○	○	○	○
I was anxious while working on this task (4)	○	○	○	○	○	○	○
I felt pressure while doing these. (5)	○	○	○	○	○	○	○

Q5 Perceived Choice-Please rate the following statements based on your current clinical rotation.

	1 Not true at all (1)	2 (2)	3 (3)	4 Somewhat true (4)	5 (5)	6 (6)	7 Very true (7)
I believe I had some choice about doing this activity (1)	○	○	○	○	○	○	○
I felt like this was not my own choice to do this task (2)	○	○	○	○	○	○	○
I didn't really have a choice about doing this task (3)	○	○	○	○	○	○	○
I felt like I had to do this (4)	○	○	○	○	○	○	○
I did this activity because I had no choice (5)	○	○	○	○	○	○	○
I did this activity because I wanted to (6)	○	○	○	○	○	○	○
I did this activity because I had to (7)	○	○	○	○	○	○	○

Q6 Value/Usefulness-Please rate the following statements based on your current clinical rotation.

	1 Not true at all (1)	2 (2)	3 (3)	4 Somewhat true (4)	5 (5)	6 (6)	7 Very true (7)
I believe this activity could be some value to me (1)	○	○	○	○	○	○	○
I think that doing this activity is useful for my future (2)	○	○	○	○	○	○	○
I think it is important to do because it can build my confidence (3)	○	○	○	○	○	○	○
I would be willing to do this again because it has some value to me (4)	○	○	○	○	○	○	○
I think doing this activity could help me to be confident (5)	○	○	○	○	○	○	○
I believe doing this activity could be beneficial to me (6)	○	○	○	○	○	○	○
I think it is an important activity (7)	○	○	○	○	○	○	○

Q7 Relatedness-Please rate the following statements based on your current clinical rotation.

	1 Not true at all (1)	2 (2)	3 (3)	4 Somewhat true (4)	5 (5)	6 (6)	7 Very true (7)
I felt really distant to this person (1)	○	○	○	○	○	○	○
I really doubt that this person and I would ever be friends (2)	○	○	○	○	○	○	○
I felt like I could really trust this person (3)	○	○	○	○	○	○	○
I'd like a chance to interact with this person in the future (4)	○	○	○	○	○	○	○
I don't feel like I could really trust this person (5)	○	○	○	○	○	○	○
I'd really prefer not to interact with this person in the future (6)	○	○	○	○	○	○	○
I don't feel like I could really trust this person (7)	○	○	○	○	○	○	○

It is likely that this person and I could become friends if we interacted a lot (8)	○	○	○	○	○	○	○

Q9 Please include your name and email address.

_____

Q10 I would like to be a participant in a zoom interview. Yes or No.

_____

End of Block: Default Question Block

APPENDIX D

JOURNAL

Appendix D

Journal

Journal 1

Start of Block: Default Question Block

Q1 Explain how your preceptor has interacted with you in the last two weeks.

_____

Q2 What type of feedback has been given to you? Explain the context. (ex. paper feedback, verbal feedback, etc.)?

_____

Q3 What type of questions have you asked your preceptor? Explain.

_____

Q4 Do you feel more or less motivated to go to your clinical rotation than when you started? Explain.

_____

Q5 What are you going to do differently in your clinical rotation after today? Why?

_____

Q6 I attest that these answers are my answers and are accurate. (Please type your name).

_____

Q7 Please type in your name.

_____

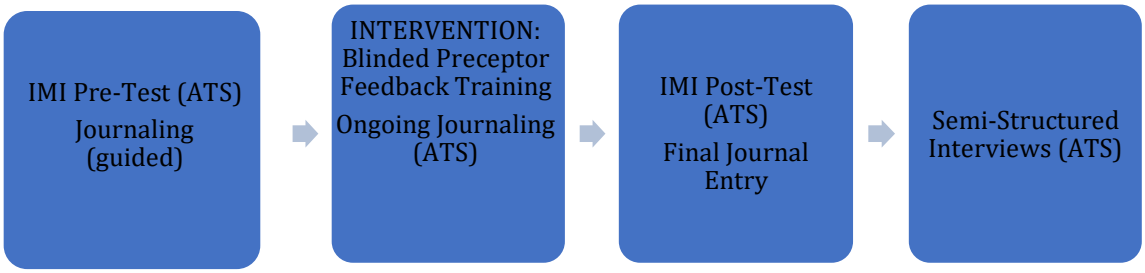
End of Block: Default Question Block

APPENDIX E

STUDY DESIGN LAYOUT

Appendix E

Study Design Layout



APPENDIX F

STUDENT INTRINSIC MOTIVATION INVENTORY

Appendix F

Student Intrinsic Motivation Inventory

	Not true at all 1	2	3	Somewhat true 4	5	6	Very true 7
Interest/Enjoyment							
I enjoyed doing this activity very much.							
This activity was fun to do.							
I thought this was a boring activity. (R)							
This activity did not hold my attention at all. (R)							
I would describe this activity as very interesting.							
I thought this activity was quite enjoyable.							
While I was doing this activity, I was thinking about how much I enjoyed it.							
	Not true at all 1	**2**	**3**	**Somewhat true 4**	**5**	**6**	**Very true 7**
Perceived Competence							
I think I am pretty good at this activity.							
I think I did pretty well at this activity, compared to other students.							
After working at this activity for a while, I felt competent.							
I am satisfied with my performance at this task.							
I was pretty skilled at this activity.							
This was an activity that I couldn't do very well. (R)							
	Not true at all 1	**2**	**3**	**Somewhat true 4**	**5**	**6**	**Very true 7**
Effort/Importance							
I put a lot of effort into this.							
I didn't try very hard to do well at this activity.							
I tried very hard on this activity.							
It was important to me to do well at this task.							
I didn't put much energy into this.							

	Not true at all 1	2	3	Somewhat true 4	5	6	Very true 7
Pressure/Tension							
I did not feel nervous at all while doing this.							
I felt very tense while doing this activity.							
I was very relaxed in doing these. (R)							
I was anxious while working on this task.							
I felt pressured while doing these.							
	Not true at all 1	**2**	**3**	**Somewhat true 4**	**5**	**6**	**Very true 7**
Perceived Choice							
I believe I had some choice about doing this activity.							
I felt like it was not my own choice to do this task. (R)							
I didn't really have a choice about doing this task. (R)							
I felt like I had to do this. (R)							
I did this activity because I had no choice. (R)							
I did this activity because I wanted to.							
I did this activity because I had to. (R)							
	Not true at all 1	**2**	**3**	**Somewhat true 4**	**5**	**6**	**Very true 7**
Value/Usefulness							
I believe this activity could be some value to me.							
I think that doing this activity is useful for _____.							
I think this is important do because it can _____.							
I would be willing to do this again because it has some value to me.							
I think doing this activity could help me to _____.							
I believe doing this activity could be beneficial to me.							
I think this is an important activity.							

	Not true at all 1	2	3	Somewhat true 4	5	6	Very true 7
Relatedness							
I felt really distant to this person. (R)							
I really doubt that this person and I would ever be friends. (R)							
I felt like I could really trust this person.							
I'd like a chance to interact with this person in the future. (R)							
I don't feel like I could really trust this person. (R)							
I'd really prefer not to interact with this person in the future. (R)							
I don't feel like I could really trust this person. (R)							
It is likely that this person and I could become friends if we interacted a lot.							
I feel close to this person.							

APPENDIX G

PRECEPTOR INTERVENTION

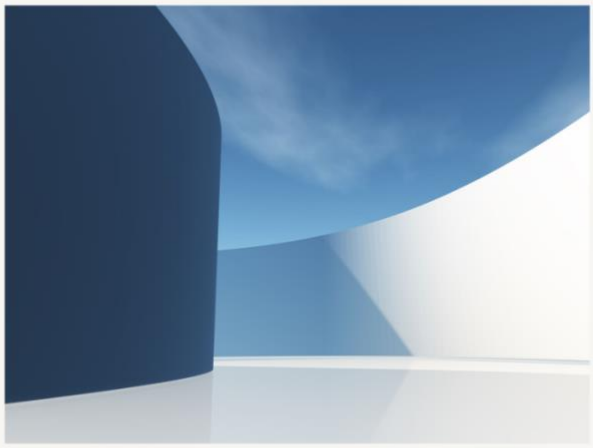
Appendix G

Preceptor Intervention

Fostering a Culture of Effective Feedback

By: Rachel Cummings, M.A., AT, Doctoral Candidate

Kent State University



Establishing a Culture of Feedback

- Ask for their goals and where they need help (specific areas of focus).
- Share your goals for them and specifically how you can help.
- Describe to the learner when and how you will have feedback conversations.
- Ask learners to give you feedback.
- Role-model effective feedback seeking and giving with colleagues.

Observe Before giving Feedback

- Plan with the learner what you will observe (e.g., may not need to observe full procedure).
- Ask for their goals and focus (i.e., know what you and they are looking for).
- Confirm time: include your schedule.
- Share how you'll observe, intervene, and give feedback.

Engaging and Sharing Feedback

- Schedule regular times for feedback.
- Seek a private location.
- Ask for their self-assessment first.
- Prepare for emotional response if feedback is disconfirming; explore this response.
- Ensure that feedback is timely, specific, objective, and for observed performance.
- Engage the learner and ensure receptiveness and understanding.
- Coach and collaboratively plan for learning and improvement.

Supporting Feedback Seeking

- Ask learners for goals for the experience.
- Ask to identify specific areas of focus.
- Match these with your expectations for experience.
- Book time in your schedule for planning, observing, and feedback discussions.
- Coach the learner and actively engage in developing a plan to use the feedback.

References

- Holmboe, E.S., Durning, S.J,, Hawkins, R.E., (2018). Practical Guide to the Evaluation of Clinical Competence. *Elsevier Inc,,* 2nd Edition. ISBN: 978-0-323-44734-8.

REFERENCES

REFERENCES

Akhtar, S. N., Iqbal, M., & Tatlah, I. A. (2017). Relationship between intrinsic motivation and students' academic achievement: A secondary level evidence. *Bulletin of Education and Research, 39*(2), 19–29.

Allen, L., & Molloy, E. (2017). The influence of a preceptor-student 'Daily Feedback Tool' on clinical feedback practices in nursing education: A qualitative study. *Nursing Education Today*, 49, 57–62.

Amimaruddin, D., & RuditaIdris, D. (2022). Exploring student nurses' learning experience in the clinical setting: A literature review. *International Journal of Nursing Education,. 14,* 31–37. https://doi.org/10.37506/ijone.v14i1.17733

Aronson, P. A., Bowman, T. G., & Mazerolle, S. M. (2015). Evaluating perceptions of culminating clinical education experiences of senior athletic training students. *Athletic Training Education Journal, 10*(3), 219–226.

Augustyniak, R. A., Ables, A. Z., Guilford, P., Lujan, H. L., Cortright, R. N., & DiCarlo, S. E. (2016). Intrinsic motivation: An overlooked component for student success. *Advanced Physiological Education, 40*, 465–466.

Austin, Z., & Sutton, J. (2014). Qualitative research: Getting started. *Research Primer, 67*(6), 436–440.

Bailey, D., Almusharraf, N., & Hatcher, R. (2021). Finding satisfaction: Intrinsic motivation for synchronous and asynchronous communication in the online language learning context. Education and Information Technologies, *26,* 2563–2583. https://doi.org/10.1007/s10639-020-10369-z

Barrett, J. L., Mazerolle, S. M., & Eason, C. M. (2016). Exploring senior level athletic training students' perceptions on burnout and work-life balance. *Athletic Training Education Journal, 11*(2), 110–118.

Bartlett, A. D., Um, I. S., Luca, E. J., Krass, I., & Schneider, C. R. (2020). Measuring and assessing the competencies of preceptors in health professions: A systemic scoping review. *BMC Medical Education, 20*(165), 1–9.

Benes, S. S., Mazerolle, S. M., & Bowman, T. G. (2014). The impact of clinical experiences from athletic training student and preceptor perspectives. *Athletic Training Education Journal, 9*(4), 156–165.

Berry, D. C. (2021). Athletic training education: Educating the future athletic training professionals. *Athletic Training Education Journal, 16*(4), 235–236.

Bowman, T. G., Mazerolle, S. M., & Barrett, J. L. (2017). Professional master's athletic training programs use clinical education to facilitate transition to practice. *Athletic Training Education Journal, 12*(2), 146–151.

Bureau, J. S., Howard, J. L., Chong, J. X. Y., & Guay, F. (2022). Pathways to student motivation: A meta-analysis of antecedents of autonomous and controlled motivations. *Review of Educational Research, 92*(1), 46–72. https://doi.org/10.3102/00346543211042426

Burgess, A., Diggele, C. V., Roberts, C., & Mellis, C. (2020). Feedback in the clinical setting. *BMC Medical Education, 20*(Suppl 2), 460. https://doi.org/10.1186/s12909-020-02280-5

CAATE. (2020). https://caate.net/Portals/0/Documents/Pursuing-and-Maintaining-Accreditation-Professional-Programs_May-22_Final.pdf

CAATE. (2022). https://caate.net/Events-Workshops/2022-Accreditation-Conference

Choi, J., Mogami, T., & Medalia, A. (2010, September). Intrinsic Motivation Inventory: An adapted measure for schizophrenia research. *Schizophrenia Bulletin, 36*(5), 966–976. https://doi.org/10.1093/schbul/sbp030

Clason, B. A., Yukhymenko-Lescroart, M. A., Sailor, S. R., & Wandeler, C. (2023). The relationship between psychosocial factors and student success in athletic training students. *Athletic Training Education Journal, 18*(4), 163–173.

Clinician Educator Milestone Project. (2021). A joint initiative of The Accreditation Council for Graduate Medical Education, The Accreditation Council for Continuing Medical Education, The Association of American Medical Colleges, and The American Association of Colleges of Osteopathic Medicine. https://www.acgme.org/milestones/resources/clinician-educator-milestones/

Clynes, M. P., & Raftery, S. E. C. (2008). Feedback: An essential element of student learning in clinical practice. *Nurse Education in Practice, 8,* 405–411.

Collier, A. (2020). Approachability of the instructor within the context of nursing clinical education: a concept analysis using Rodger's evolutionary method. *International Journal of Health Sciences Education, 7*(1). https://doi.org/10.59942/2325-9981.1094

Commission on Accreditation of Athletic Training Education [CAATE]. (2023). https://caate.net/Search-for-Accredited-Programs

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16,* 297–334. https://doi.org/10.1007/BF02310555

Delforge, G. D., & Behnke, R. S. (1999). The history and evolution of athletic training education in the United States. *Journal of Athletic Training, 34*(1), 53–61.

Diakogeorgiou, E., Ray, R. R., Jr., Brown, S., Hertel, J., & Casa, D. J. (2021). The evolution of the athletic training profession. *Kinesiology Review*, *10*(3), 308–318. https://doi.org/10.1123/kr.2021-0027

Dodge, T., Mazerolle, S. M., & Bowman, T. G. (2014). Challenges faced by preceptors serving in dual roles as health care providers and clinical educators. *Athletic Training Education Journal*, *9*(1), 29–35.

Dodge, T., Mitchell, M., & Mensch, J. (2009). Student retention in athletic training education programs. *Journal Of Athletic Training (National Athletic Trainers' Association)*, *44*(2), 197–207. https://doi.org/10.4085/1062-6050-44.2.197

Drew, C. (2020). Self-determination theory by Deci and Ryan. *Helpful Professor*. http://helpfulprofessor.com/self-determination theory

Edler, J. R., Eberman, L. E., & Walker, S. (2017). Clinical education in athletic training. *Athletic Training Education Journal*, *12*(1), 46–50.

Eiroa, D. C., & Konin, J. G. (2021). How to be an Effective athletic training preceptor: A literature review. *The Internet Journal of Allied Health Sciences and Practice*, *19*(1), Article 4.

Eldred, C. M., Neil, E. R., Dougal, Z. J., Walker, S. E., Grimes, A. M., & Eberman, L. E. (2021). Preceptor perceptions of the immersive clinical experience in athletic training education. *Athletic Training Education Journal*, *16*(1), 42–52.

Elies, A. M., Groff, S., McCraney, M., & Panesar-Aguilar, S. (2022). Grit and academic success in graduate masters-level athletic training programs. *International Journal of Social Science and Human Research*, *5*(11), 4962–4971. https://doi.org/10.47191/ijsshr/v5-i11-18

Elliott, A. P., Gallucci, A., Oglesby, L., Funderburk, L., Lanning, B. A., & Tomek, S. (2023). Burnout and adverse outcomes in athletic training students: Why all healthcare educators should be concerned. *The Internet Journal of Allied Health Sciences and Practice, 21*(1), Article 16.

Fong, C. J., Patall, E. A., Vasquez, A. C., & Stautberg, S. (2019). A meta-analysis of negative feedback on intrinsic motivation. *Educational Psychology Review, 31*(1), 121–162.

Hankemeier, D. A., Kirby, J. L., Walker, S. E., & Thrasher, A. B. (2017). Athletic training preceptors' perceived learning needs regarding preceptor development. *Athletic Training Education Journal, 12*(1), 39–45.

Hardavella, G., Aamli-Gaagnat, A., Saad N., Rousalova, I., & Sreter, K. B. (2017). How to give and receive feedback effectively. *Breathe, 13*, 327–333.

Holmboe, E.S ., Durning, S. J., & Hawkins, R. E. (2018). *Practical guide to the evaluation of clinical competence* (2nd ed.). Elsevier Inc. ISBN: 978-0-323-44734-8

Hyland, D., Cavallario, J., Neil, E. R., Laursen, M., & Eberman, L. E. (2020). Socialization experiences of athletic training preceptors. *Athletic Training Education Journal, 15*(2), 102–112.

IBM Corp. (2020). IBM SPSS Statistics for Windows (Version 27.0) [Computer software]. IBM Corp.

IBM Corp. (2023). IBM SPSS Statistics for Windows (Version 29.0.2.0) [Computer software]. IBM Corp.

Jebb, A. T., Ng, V., Tay, L. (2021). A review of key Likert scale development advances: 1995-2019. *Frontiers in Psychology, 12,* 637547. https://doi.org/10.3389/fpsyg.2021.637547. PMID: 34017283; PMCID: PMC8129175.

Kilbourne, B. F., Bowman, T. G., Barrett, J. L., Singe, S, M. (2021). A theoretical model of transition to practice for athletic trainers. *Journal of Athletic Training, 56*(5), 508–517. https://doi.org/10.4085/1062-6050-445-19. PMID: 34000017; PMCID: PMC8130771

Knaack, P. (1984). Phenomenological research. *Western Journal of Nursing Research*, 6(1), 107–114.

Kotera, Y., Taylor, E., Fido, D., Williams, D., & Tsuda-McCaie, F. (2021). Motivation of UK graduate students in education: Self-compassion moderates pathway from extrinsic motivation to intrinsic motivation. *Current Psychology, 42,* 10163–1017. https://doi.org/10.1007/s12144-021-02301-6

Kunanitthaworn, N., Wongpakaran, T., Wongpakaran, N., Paiboonsithiwong, S., Songtrijuck, N., Kuntawong, P., & Wedding, D. (2018). Factors associated with motivation in medical education: A path analysis. *BMC Medical Education, 18*(1), 140. https://doi.org/10.1186/s12909-018-1256-5. PMID: 29914462; PMCID: PMC6006981

Kuśnierz, C., Rogowska, A. M., & Pavlova, I. (2020). Examining gender differences, personality traits, academic performance, and motivation in Ukrainian and Polish students of physical education: A cross-cultural study. *International Journal of Environmental Research and Public Health, 17*, 5729. https://doi.org/10.3390/ijerph17165729

Kusurkar, R. A., & Croiset, G. (2015). Autonomy support for autonomous motivation in medical education. *Medical Education Online, 20,* 27951. https://doi.org/10.3402/meo.v20.27951. PMID: 25953033; PMCID: PMC4424234

Lefroy, J., Watling, C., Teunissen, P., & Brand, P. (2015). Guidelines: The do's, don'ts and don't knows of feedback for clinical education. *Perspectives on Medical Education, 4*, 284–299. https://doi.org/10.1007/s40037-015-0231-7

Lewthwaite, R., & Wulf, G. (2017). Optimizing motivation and attention for motor performance and learning. *Current Opinion in Psychology, 1*6, 38–42. https://doi.org/10.1016/j.copsyc.2017.04.005. Epub 2017 Apr 13. PMID: 28813352.

Mazerolle, S. M., & Dodge, T. (2015). Role of clinical education experiences on athletic training students' development of professional commitment. *Athletic Training Education Journal*, *10*(2), 138–145.

Mazerolle, S. M., Bowman, T. G., & Barrett, J. (2016). Autonomy, mentorship, and feedback: The core of clinical education in athletic training. *International Journal of Athletic Therapy and Training, 21*, 40-47. https://doi.org/10.1123/ijatt.2016-0043

Mazerolle, S. M., Bowman, T. G., & Dodge, T. M. (2013). Program director perspectives on athletic training student motivation to complete their professional athletic training degrees. *Athletic Training Education Journal, 8*(3), 58–65.

Mazerolle, S. M., Bowman, T. G., & Dodge, T. M. (2014). The professional socialization of the athletic trainer serving as a preceptor. *Journal of Athletic Training, 49*(1), 75–82. https://doi.org/10.4085/1062-6050-48.6.16

McAuley, E., Duncan, T., & Tammen, V. V. (1987). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: A confirmatory factor analysis. *Research Quarterly for Exercise and Sport, 60*, 48–58.

McAuley, E., Duncan, T., & Tammen, V. V. (1989). Research quarterly for exercise and sport psychometric properties of the intrinsic motivation inventory in a competitive sport setting: A confirmatory factor analysis. *Research Quarterly for Exercise and Sport, 60*, 48–58. http://dx.doi.org/10.1080/02701367.1989.10607413

McKeon, P. A., MeKeon, J. M., & Geisler, P. R. (2017). Redefining professional knowledge in athletic training: Whose knowledge is it anyway? *Athletic Training Education Journal, 12*(2), 95–105. https://doi.org/10.4085/120295

Moll-Khosrawi, P., Cronje, J. S., Zollner, C., Kubitz, J. C., & Schulte-Uentrop, L. (2021). Understanding how the motivational dimension of learning is influenced by clinical teaching in medical education: A prospective cohort study. *Annals of Medicine and Surgery*, *65*, 102366–102373.

Nakayoshi, Y., Takas, M., Niitani, M., Imai, T., Okada, M., Yamamoto, K., & Takei, Y. (2021). Exploring factors that motivate nursing students to engage in skills practice in a laboratory setting: A descriptive qualitative design. *International Journal of Nursing Sciences*, *8*(1), 79–86.

National Athletic Trainers' Association [NATA]. (2000). https://www.nata.org/nata-now/articles/2020/12/develop-preceptor-skills-nata-master-program

National Athletic Trainers' Association [NATA]. (2021). https://www.nata.org/nata-now/articles/2021/04/pec-aides-continuous-learning

National Athletic Trainers' Association [NATA]. (2023). https://www.nata.org/nata-regional-workshops

Neil, E. R., Welch Bacon, C. E., Nottingham, S. L., Kasamatsu, T. M., & Eberman, L. E. (2019). Preceptors' frequency and supervision of athletic training students' medical documentation during clinical education. *Athletic Training Education Journal*, *14*(3), 182–190.

Nokes, R. D., Pitney, W. A., Bowman, T. G., & Nottingham, S. (2022). Professional master's athletic training students' career influences. Part I: Perceptions of athletic training. *Athletic Training Education Journal*, *17*(1), 53–63.

Nottingham, S. L., & Henning, J. (2014a). Feedback in clinical education, Part I: Characteristics of feedback provided by approved clinical instructors. *Journal of Athletic Training*, *49*(1), 49–57.

Nottingham, S. L., & Henning, J. (2014b). Feedback in clinical education, Part II: Approved clinical instructor and student perceptions of and influences on feedback. *Journal of Athletic Training, 49*(1), 58–67.

Nottingham, S. L., & Kasamatsu, T. M. (2018). Paired athletic training preceptors' and students' perceptions of effective preceptor characteristics. *Journal of Allied Health, 47*(1), e1-e7. PMID: 29504024

Nwizu, U., Malhotra, J., Ndefo, U., Moye, P., Nwaesei, A. S., Chinwuba, H., & Atanda, A. (2023). Clinical pharmacy experiential education and training: A White Paper on preceptor development. *American Journal of Pharmacotherapy and Pharmaceutical Sciences, 2*(23). https://doi.org/10.25259/AJPPS_2023_023

Ohio Laws & Administrative Rules Legislative Service Commission. (2023). https://codes.ohio.gov/ohio-administrative-code/rule-4755-46-02

Orsini, C., Evans, P., & Jerez, O. (2015). How to encourage intrinsic motivation in the clinical teaching environment? A systematic review of the self-determination theory. *Journal of Education Evaluation of Health Professions, 12,* 1–8.

Orsini, C., Rodrigues, V., Tricio, J., & Rosel, M. (2022). Common models and approaches for the clinical educator to plan effective feedback encounters. *Journal of Educational*

Evaluation for Health Professions, *19*, 35. https://doi.org/10.3352/jeehp.2022.19.35. PMID: 36537186; PMCID: PMC9842479

Ostrow, K. S., & Heffernan, N. T. (2018). Testing the validity and reliability of intrinsic motivation inventory subscales within ASSISTments. In Artificial Intelligence in Education. AIED 2018 (pp. 381-394). *Lecture Notes in Computer Science*, Vol. 10947. Springer. https://doi.org/10.1007/978-3-319-93843-1_28

Peer, K. S., & McClendon, R. C. (2002). Sociocultural learning theory in practice: Implications for athletic training educators. *Journal of Athletic Training, 37*(4 Suppl), S136–S140. PMID: 12937534; PMCID: PMC164414.

Pitney, W. A., & Parker, J. (2002). Qualitative research applications in athletic training. *Journal of Athletic Training*, *37*(4 Suppl), S168-S173. PMID: 12937540; PMCID: PMC164420.

Radtke, S. (2017). The role and load of the athletic training clinical education coordinator. *Athletic Training Education Journal*, *12*(2), 113–120.

Rager Huett, J. L., & Wessel, R. D. (2022). Exploring best practices in preceptorships: Preceptor selection. *Athletic Training Education Journal*, *17*(1), 106–116.

Rosli, N. A., Choo, T. Y., & Idris, D. R. (2022). Impact of preceptorship models for undergraduate nursing students and its implementation: Systematic review. *International Journal of Nursing Education*, *14*(1), 111–118.

Ryan, R. M., & Deci, E. L. (2000). *Behavior model.* https://www.besci.org/models/self-determination-theory.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*, 54–67.

Ryan, R. M., & Deci, E. L. (2000). *The Intrinsic Motivation Inventory (IMI).* https://selfdeterminationtheory.org/wp-content/uploads/2022/02/IMI_Complete.pdf

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology, 61*, 101860, ISSN 0361-476X https://doi.org/10.1016/j.cedpsych.2020.101860. (https://www.sciencedirect.com/science/article/pii/S0361476X20300254)

Sarkany, D., & Deitte, L. (2017). Providing feedback: Practical skills and strategies. *Academic Radiology, 24*(6), 740–746.

Sattar, M., Palaniappan, S., Lokman, A., Shah, N., Khalid, U. & Hasan, R. (2020). Motivating medical students using virtual reality based education. *International Journal of Emerging Technologies in Learning (iJET), 15*(2), 160-174. Kassel, Germany: International Journal of Emerging Technology in Learning. https://www.learntechlib.org/p/217172/

Sawatsky, A. P., O'Brien, B. C., & Hafferty, F. W. (2022). Autonomy and developing physicians: Reimagining supervision using self-determination theory. *Medical Education, 56*(1), 56–63. https://doi.org/10.1111/medu.14580

Singe, S. M., Myers, S. L., Campbell, M., Clements, C., & Eberman, L. E. (2020). Perceived challenges of clinical immersion in professional master's programs: A report from the Athletic Training Clinical Education Network. *Journal of Athletic Training, 1*5(1), 18–25.

The KSU framework. (n.d.). https://www-s3-live.kent.edu/s3fs-root/s3fs-public/file/KSU%20EdD%20in%20Interprofessional%20Leadership%20Overview%202023_0.pdf?VersionId=njyXNaHJ16B5j7WJ7ArHRgwobV6tSpUJ

Torbergsen, H., Utvær, B. K., & Haugan, G. (2023). Nursing students' perceived autonomy-support by teachers affects their intrinsic motivation, study effort, and perceived learning outcomes. *Learning and Motivation, 81*, 101856.

Volberding, J. L., & Richardson, L. (2015). Observations on current practices in preceptor training. *Athletic Training Education Journal, 10*(4), 332–334.

Walker, S. E., Singe, S. M., & Cavallario, J. M. (2021). The role mentoring plays in the transition to practice of newly credentialed athletic trainers. *Journal of Athletic Training, 56*(3), 227–233. https://doi.org/10.4085/1062-6050-0242.20

Walker, S. E., Thrasher, A. B., Singe, S. M., & Rager, J. L. (2019). Challenges for newly credentialed athletic trainers during their transition to practice. *Journal of Athletic Training, 54*(11), 1197–1207. https://doi.org/10.4085/1062-6050-387-17

Weallans, J., Roberts, C., Hamilton, S., & Parker, S. (2022). Guidance for providing effective feedback in clinical supervision in postgraduate medical education: A systematic review. *Postgraduate Medical Journal*, *98*(1156), 138–149. https://doi.org/10.1136/postgradmedj-2020-139566

Weidner, T. G., & Henning, J. M. (2002). Historical perspective of athletic training clinical education. *Journal of Athletic Training, 37*(4 Suppl), S222-S228. PMID: 12937549; PMCID: PMC164429

Welch Bacon, C. E., Cavallario, J. M., Walker, S. E., Bay, R. C., & VanLunen, B. L. (2022). Characteristics of patient encounters for athletic training students during clinical education: A report from the association for athletic training education research network. *Journal of Athletic Training*, *57*, 640–649.

West, J. J., Kraus, K. L., & Armstrong, K. J. (2018). Preceptor facilitated debriefing improves athletic training student's clinical performance and work efficacy. *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association, 4*(2), Article 5. https://doi.org/10.25035/jsmahs.04.02.05 https://scholarworks.bgsu.edu/jsmahs/vol4/iss2/5

Williams, C. R., Wolcott, M. D., Minshew, L. M., Bentley, A., & Bell, L. (2021). A qualitative preceptor development needs assessment to inform program design and effectiveness. *American Journal of Pharmaceutical Education, 85*(10), 1037–1047.

Wu, M.-J., Zhao, K., & Fils-Aime, F. (2022). Response rates of online surveys in published research: A meta-analysis. *Computers in Human Behavior Reports, 7*, 100206. https://doi.org/10.1016/j.chbr.2022.100206

Young, S., & Guo, K. L. (2020). Cultural diversity training: The necessity of cultural competence for health care providers and in nursing practice. *The Health Care Manager 39*(2), 100–108. https://doi.org/10.1097/HCM.0000000000000294