The Physical Educator Vol. 76 • pp. 1046–1063 • 2019
https://doi.org/10.18666/TPE-2019-V76-I4-8948

PEDAGOGY

A Case Study of the Rock Climbing Self-Efficacy of High School Students

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Abstract

The popularity of rock climbing continues to increase. However, little research is available on the pedagogy of rock climbing. This study explored the effect of learning activities in a school-based rock climbing program on students' climbing self-efficacy. It used a case study design and data collection methods included (a) observations of the learning environment, (b) individual reflection journals, (c) focus group interviews, and (d) a course outline. Qualitative thematic analysis provided insight into (a) the type of learning environment conducive to improving climbing self-efficacy, (b) the influence of the sources of self-efficacy, and (c) the activities that were most efficient for the development of climbing self-efficacy. Findings indicate that effective learning activities should be meaningful, diversified, individualized, progressively challenging, and take place in a safe and collaborative environment.

Lifetime physical activities are less prominently featured in physical education curricula than team games (Fairclough, Stratton, & Baldwin, 2002). Nevertheless, they may be more effective than team games for promoting lifelong physical activity since they require only one or two people (Fairclough et al., 2002). The popularity of one of these lifelong physical activities, rock climbing, is continuously

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increasing. In 2012, a growth of over 25% was observed in the number of new rock climbers (The Outdoor Foundation, 2013). One explanation for this growth in participation may be related to the increase of indoor rock climbing facilities, which allow climbers to climb year-round and remove several risk factors (Woollings, McKay, & Emery, 2015). The inclusion of rock climbing activities within physical education curricula has been facilitated by the availability of today's rock climbing facilities. Rock climbing activities have been used in school curricula for a variety of physical (Lirgg, Di Brezzo, & Gray, 2006), cognitive (Boschker, Bakker, & Michaels, 2002; Mittelstaedt, 1997), and affective (Hansen & Parker, 2009) outcomes.

An important pedagogical task for teachers of rock climbing is to help their students develop climbing self-efficacy, which is an individual's belief in his or her ability to climb a wall successfully with efficient techniques. Self-efficacy has been discussed as a key motivational factor for participation in adventure physical activities (Llewellyn, Sanchez, Asghar, & Jones, 2008). As well, given the physical and mental complexity of rock climbing (Hardy & Hutchinson, 2007), self-efficacy is a pertinent construct that needs to be examined. Considering the limited scope of research on climbing pedagogy, this research investigated the characteristics of a high school rock climbing program. We explored the learning activities that might be most beneficial for improving the climbing self-efficacy of high school students. Three main research questions were addressed in this study:

1. What are the learning activities that take place in the program?
2. What are the sources of self-efficacy embedded in the learning activities of the rock climbing program?
3. How did the learning activities impact the self-efficacy of high school students?

Literature Review

Climbing self-efficacy is a useful construct for determining the likelihood that participants will attempt rock climbing and persist despite failures. Climbing self-efficacy has been shown to increase the frequency of attempts made by climbers (Gómez, Hall, Hill, & Ackerman, 2007). Bandura (1997) proposed four main sources of

influence that may enhance or decrease an individual's self-efficacy: mastery experiences, vicarious learning, verbal persuasion, and affective states.

Mastery Experiences

According to Bandura (1997), the most effective method of developing self-efficacy is through mastery experiences. In other words, when an individual accomplishes a goal successfully, that person will enhance his or her self-efficacy for that specific goal. As well, mastery experiences will be most influential for determining the self-efficacy of individuals who are learning new behaviors (Bandura, 1997).

The effectiveness of six sessions of a climbing program, which included mastery experiences, for students with special needs found a significant increase and a large effect size ($d = 0.84$) in self-efficacy (Mazzoni, Purves, Southward, Rhodes, & Temple, 2009). In a study examining the effect of a high element ropes course, an activity with similar psychological and physical demands as rock climbing, generalized self-efficacy and ropes course self-efficacy were found to have improved significantly following students' participation on a high ropes course (Cordle, Van Puymbroeck, Hawkins, & Baldwin, 2016). Mastery experiences were suggested to be the most pertinent source of students' self-efficacy.

Vicarious Learning

By observing a social model performing a behavior, a person can establish a belief about his or her ability to perform the same or a similar behavior. These vicarious experiences are thought to be most effective when the model is similar in characteristics and ability levels to the individual making the observation (Bandura, 1997). Harrison and McGuire (2006) examined the effect of observing different models on the climbing self-efficacy of participants. A significant difference in climbing self-efficacy from pretest to posttest between the control and intervention groups was found.

Verbal Persuasion

Bandura (1997) suggested that verbal persuasion is more effective at undermining than enhancing self-efficacy. For example, if a student is provided overenthusiastic verbal persuasion that he or she can accomplish a certain behavior and is afterward confronted by

failure, his or her self-efficacy may diminish. Verbal persuasion can be used in the form of goal setting. Goal setting is defined as the objective of an action limited by time (Baghurst, Tapps, & Kensinger, 2015). For example, if an instructor provides a goal for a participant, the instructor is telling the participant that he or she can accomplish this goal in a specified amount of time. Sarrazin and Famose (2005) examined the effect of different climbing goals on the self-efficacy and performance of novice climbers. The self-efficacy scores of the groups corresponding to difficult and moderate goals increased after every session. The researchers suggested that when a teacher verbally persuaded a student that she or he was able to complete a difficult climb, the student gained self-efficacy and in turn demonstrated improved performance.

Affective States

Finally, the interpretation of physiological and affective states may affect a person's self-efficacy. For example, if a student feels stressed before a competition, a negative appraisal of that stress will result in a diminished self-efficacy. Affective states are not usually considered as powerful a source of self-efficacy as the previous three sources of self-efficacy (Bandura, 1997). However, in challenging activities that can create feelings of fear (e.g., climbing high walls), affective states can be an influential source of self-efficacy (Bandura 1997).

Mental imagery can be an effective method of reducing fears (Martin, Moritz, & Hall, 1999). Jones, Mace, Bray, MacRae, and Stockbridge (2002) provided 70 min of imagery script training to an experimental group and low-impact aerobic exercises to a control group. The experimental group had significantly lower levels of perceived stress and higher levels of self-efficacy in their ability to execute the correct climbing techniques.

Method

Design

A case study, described as a research approach to answer how and why questions within a bounded system (Yin, 2014), was used for the examination of this self-contained climbing program. The focus of this approach is the study of a contemporary phenomenon

and its context. A single-case study design was used in the examination of a climbing pedagogy that takes place in an authentic environment, which, unlike an experimental design, does not constrain behavioral events (Yin, 2014). Prior to data collection, the human research ethics board of the authors' university and the school board of the school under study approved the research.

Case Description

The rock climbing program. The rock climbing program was an elective high school course. Students were provided opportunities to develop a strong foundation in climbing. At the end of the program, students were capable of bouldering, top-roping, leading, setting routes, managing risks, and potentially obtaining an indoor rock climbing instructor certification. The rock climbing program comprised daily 75-min lessons over a 5-month semester.

Participants. Twenty-six out of 30 students enrolled in the rock climbing program volunteered to be included in this study. After being provided with a written description of the study to bring home, the students and their parents submitted their written consent to the teacher. Participants had varying climbing abilities at the beginning of the study (i.e., participants were composed of novice, $n = 12$; intermediate, $n = 9$; and experienced, $n = 5$, rock climbers). The sample comprised 16 female and 10 male students. The ages of the students ranged from 13 to 16 years old.

The instructors. The main teacher responsible for the rock climbing program was a certified physical education teacher and certified indoor rock climbing instructor. Two additional instructors included a competitive professional rock climber and a rock climbing center manager.

Data Collection

The research questions were addressed with four data sources. The use of multiple data sources aided efforts to triangulate findings and ensure trustworthiness.

Observations of the learning environment. The purpose of the observations was to establish and describe the learning activities that took place in the rock climbing program. The principal investigator observed the 75-min lessons daily in the first two weeks of the program and twice a week for the remainder of the 5-month semester.

Program outline. A program outline and schedule of activities was used to complement the observations, provide a more detailed description of the activities, and prepare reflection journal questions.

Student reflection journals. The purpose of the individual reflection journals was to probe general themes regarding key sources of self-efficacy. Participants were given 15 min of class time every other week to answer two to four open-ended questions in a self-reflection journal. These questions were based on the four main sources of self-efficacy and the activities that took place in the preceding two weeks. For example, one question asked students to "Describe any differences in your ability to climb when you are projecting a boulder problem by yourself, as a class, or with partners." An equal number of random journals were transcribed and analyzed from each of the student groups so that the the novice students' voice would not be overrepresented.

Focus group interviews. Three focus group interviews probed deeper into aspects of the learning activities in the rock climbing program and complemented the individual reflection journals. The focus group interviews took place after 5 months of participation in the rock climbing program. The interview was "open-ended and [assumed] a conversational manner"; however, it followed the preestablished protocol questions more closely than a "prolonged case study interview" would (Yin, 2014, p. 110).

As suggested by Yin (2014), focus group interviews utilized a list of preestablished questions presented in a conversational manner by the focus group facilitator. Based on the recommendations by Stewart and Shamdasani (1990), groups were separated based on experience level so that the opinion of novice students was not distorted. These interviews took place during class time that was most convenient for the participants and the teacher. The focus group interviews lasted on average 30 min and were held in groups of five to seven students in a quiet area of the rock climbing gym. All interviews were audiotaped and the principal investigator took notes of any pertinent nonverbal communication.

Data Analysis

Prior to data analysis, the data emanating from the focus group interviews, student journal entries, observations, and course outline were transcribed into the qualitative data management software

NVivo 11. The robust and systematic framework of qualitative thematic analysis was used in the identification of codes, patterns, and themes within the data set (Braun & Clarke, 2006). Analysis was done systematically through the following six phases: (1) familiarize yourself with the data, (2) generate initial codes, (3) search for themes, (4) review themes, (5) define and name themes, and (6) produce the report.

The following strategies were used in the establishment of trustworthiness: (a) triangulation of information through multiple data collection methods; (b) peer review and discussions with two experienced qualitative researchers; (c) an in-depth description of the environment; (d) prolonged engagement; and (e) the examination and restructuring of themes until all cases fit within the final major themes (Yin, 2014).

Findings

This research investigated the characteristics of the rock climbing program and determined which learning activities might be most beneficial for improving the self-efficacy of high school students. Three themes emerged from the four data sources.

Theme 1: A Learning Environment Conducive to Developing Self-Efficacy

This theme describes the complexity of the learning environment, which affected the climbing self-efficacy of students. The learning environment comprised a variety of components, each contributing in some way to changes in climbing self-efficacy and climbing performance.

Social aspect. The social nature of climbing was apparent throughout the program. In the early stages of the program, instructors encouraged the more experienced students to help their novice peers. The following journal entry from a novice climber provides evidence for the collaborative nature of these social interactions: "Everyone was really encouraging, it's [grade] nine to twelve, but everyone was really nice and it worked together."

Throughout the program, students were most often climbing in pairs or in small groups. Some students, as demonstrated by the following interview statement, preferred climbing in groups because it allowed them to benefit from the encouragement and advice of other

students: "One good thing I've realized is that it is always positive, someone is always trying to help you."

Through journal entries and interviews, several students alluded to the increased social nature of climbing activities such as bouldering: "When you are bouldering you are not usually alone, but when I do go alone it is pretty lame, you don't feel motivated to do it." Students described throughout their interviews and journal entries the typical encouragements heard in the rock climbing community: "One of the most common words that I hear people chanting is 'you've got this' and their names and 'come on,' it feels like you're doing the route with them and you're happy when they get it."

Students also described the pure enjoyment of climbing for its own sake. Teachers reinforced this emphasis on fun throughout the program. For example, before the competition one teacher told students, "Focus on having fun, and don't worry about results." The following interview statement from a novice climber describes this atmosphere: "I liked climbing, so it made it fun, it didn't really feel like a school class it felt more like a camp."

Informational expectations and safety responsibilities. Throughout the program, the safety of students was paramount. The course outline specified that assessment would be based on "safety and risk management," among other criteria. The following journal entry from an experienced climber describes the importance of safety protocols: "[The teacher] taught us well and also helped us after to make sure we did everything correctly and safely." Within the rock climbing community, it is often expected that, in addition to belaying one's climber, partners provide each other with information about the climbing route (i.e., the information that climbers refer to as "beta"). The following journal entry from an intermediate climber reflects the observations of students providing beta to each other throughout the program: "I was trying an orange route and [another student] helped me with balance and how to hold a hold."

Being observed. Data from the observations indicated the structure of the facility increased the likelihood a climber would be observed. For example, although bouldering activities were most often done in partners, certain activities were completed in a larger group settings where one student climbed and an average of four students and one instructor provided feedback and observed the climber.

Being observed during competition affected several of the students. Students of all experience levels indicated that being observed made them nervous and hindered their performances. Students identified that they were most nervous when several people were watching them or when observers were strangers. Although the majority of students indicated that being observed had a negative effect on their performance, some students mentioned the neutral or motivating effects of being observed: "There was people watching from above, and I could see them while I climbed, the people were encouraging me, and while it made me more nervous, it also motivated me to get it."

Theme 2: The Influences of the Sources of Self-Efficacy Embedded Within the Climbing Program

This theme represents the statements that students made about the effect of mastery experiences, vicarious learning, verbal persuasion, and affective states on their climbing self-efficacy. Several students, such as a novice climber in a journal entry, indicated that they are "a lot more confident than when [they] first started out." According to Bandura (1997), four sources of self-efficacy may have accounted for this confidence or in some cases lack of confidence. It is clear that, based on the student journals and interviews, all four sources were embedded within the climbing program.

Mastery experiences. According to the outline of the program, active participation was worth 50% of the students' grades. The observations confirmed this emphasis on active participation and mastery experiences. Several students discussed the importance of being challenged adequately through progressive steps. Once students had practiced a related but easier task (e.g., top-roping), they were more confident to attempt more challenging tasks (e.g., lead climbing). The following interview statement from an experienced climber demonstrates how mastery experiences through progressively challenging activities increased self-efficacy: "I took a fall on the route and I thought it wasn't as bad as I expected, I feel that the teacher making me do it on top rope first showed me that I actually can do the route."

When asked for their input on methods for improving their confidence to climb, students suggested that practicing the activity would be the most helpful strategy for improving their self-efficacy.

The following interview statement from an intermediate climber exemplifies the benefit of practicing an advanced climbing move: "When doing speed, the teacher got us to practice our dynos, we were terrified with doing dynos, but then when we were on the speed wall we were not scared anymore."

Vicarious experiences. In addition to providing information on the best path to take up a certain route (beta), observing other climbers provided students with a positive and sometimes negative source of self-efficacy. Overall, students indicated that observing another climber successfully completing a prospective route increased their self-efficacy. The following statement from an experienced climber is representative of these sentiments: "I get really nervous lead climbing, so I like to watch someone else do the route before, it also makes me realize it is possible and I can physically do it." However, the following statement from an experienced climber shows how watching a climber unsuccessfully attempt a route resulted in less self-efficacy for climbing that particular route for the observer: ". . . if they don't get it, I think if they can't do it, I can't do it also."

When the observer perceived him- or herself to be similar in height, age, or climbing proficiency as the model climber, the observer was more likely to be able to relate to the success of the model and develop self-efficacy for climbing that route. For example, an experience climber mentioned, ". . . watching people that are kind of my age, I think I can probably do that."

Verbal persuasion. Verbal praises were noted in observations as being used frequently by both teachers and students throughout the semester. The most frequently heard praises were "come on, you got this!" and "you can do it!" Students identified verbal praise as leading to increased confidence for doing more difficult routes. The following interview statement from an experienced climber describes such instances: "When I am stuck on a move and I think I have an idea of how to do it and I start moving that way and she says 'come on,' I know that she knows that I can do it and it makes me feel better."

Although verbal praise improved the self-efficacy of some students, such as the following journal entry of an experienced climber demonstrates, sometimes the verbal praise was not enough to improve self-efficacy: "[After my partner said] you can do it! I thought maybe I can, then I thought never mind, I definitely can't." The

frequently used verbal praise of "you can do it!" was beneficial for the self-efficacy of most students; however, the following statement demonstrates how one intermediate climber had reservations about hearing verbal praises while climbing: ". . . it helps a lot, sometimes it pressures you and people are making you more nervous."

Affective states. Anxiety from climbing harder routes or from lead climbing resulted in reduced performance and a reduction in self-efficacy for several students. The following excerpt from a novice climber represents these sentiments: "I think [climbing is] a little harder when you are scared of falling, we were definitely strong enough to do it, but we just needed to get over it." Feelings of anxiety or nervousness were frequently reported when students described their experiences with two climbing competitions. For example, an experienced climber mentioned, "I really hate the comp because it's really stressful and I don't feel like I climb my best under that pressure."

However, some students, such as the following intermediate climber, experienced excitement and motivation from participating in the competition: "I did way better during comp, trusted myself way more." Several students attempted to overcome a fear of heights or fear of falling through different strategies. Some students preferred to concentrate on the immediate climbing moves that must be done. One experienced climber mentioned, "Just climbing one move at a time, I feel like I will be able to deal with it when I get there."

Several experienced climbers described using a motivating talk from climbing partners as a strategy to overcome the fear associated with lead climbing: "[My climbing partner] and I have a pep talk before leading and repeat our mantra." Several students explained how resting helped them to reduce their nervousness. For example, one intermediate climber said, "Now when I get nervous, I just don't pay attention to it, . . . I just chalk and rest, and before I would start shaking and ask for a [break]."

The downside of high expectations and high self-efficacy. Despite observations of the teacher frequently asking students to think about the "best of [themselves and] not compare [themselves] to someone else," several students held high expectations for their performance and demonstrated a fear of failure. One experienced climber mentioned in an interview, "When I see people climbing

before me . . . if they got it, I would be scared because there are high expectations for me to get it."

Theme 3: Learning Activities, "I would suggest doing them because it helped"

As the excerpt in the title of this theme indicates, several learning activities were useful for improving the climbing self-efficacy and performance of students. This theme describes the necessity of using different activities for different periods of the learning process. The following four learning activities were identified by the students: goal setting, fitness training, technique-oriented learning activities, and peer teaching.

Goal setting. Goal setting as a learning activity was used informally daily. For example, students were informed that they should complete a set number of routes by the end of the class. At the beginning of the program, a formal goal-setting activity was used. A typical goal set for the novice climbers was, "finish all the [beginner level] bouldering routes" and the typical goal set for the expert climbers was, "climb [an intermediate level route on] lead without stopping."

In addition to the formal goal-setting activity, the following interview statement from an experienced climber describes how needing to meet the requirements for becoming a rock climbing instructor was motivating: "Having a goal or a reason to do something helped me. For example, I needed to climb a certain level of lead to get into the [Climbing Instructor Course]."

Fitness training. The fitness-intensive component of the climbing program took place twice a week. These training sessions took place outside of the climbing gym area and included exercises such as planks, throwing medicine balls with a partner, and working on agility with stepladders. Several students commented on the performance benefits they felt originated from this fitness training. The following interview excerpt from an intermediate climber represents these comments: "In my first year I wasn't training as hard as I could have, [this year] I tried really hard and went from doing a 5.10 and struggling to doing a 5.11 and actually finishing them, the training really helped, and I would suggest doing them because it helped."

Endurance training, which focuses on improving stamina through prolonged climbing, was used extensively in the beginning of the semester. An experienced climber explained how these

exercises helped develop climbing endurance: "Endurance has helped me build strength, especially down-climbing even though it's sort of terrifying."

Technique-oriented learning activities. A variety of techniques for improving climbing performance were taught throughout the year. These techniques included heel-hooking, foot-matching, edging, taking appropriate rests, and sequencing.

Another learning activity focused on taking rests in appropriate places on the route. Students were told to take a minimum of two rest periods in which they would reapply chalk on their hands and breathe slowly. The following interview excerpt from an intermediate climber represents how several students described the effect that this relaxation activity had on them: "They taught us how to rest on the wall, straight arms and breathe, it helped me a lot, especially for lead climbing, not shaking out but doing it slowly in order to not send stress signals."

Several learning activities focused on teaching students to look at a route from the ground and decide how to move up the wall. For example, the storytelling activity asked students to create their sequence and tell the belayer every sequence they will do, before they start climbing. The following journal excerpt from an intermediate climber represents the thoughts several students had about route visualization and sequencing: "Helped me understand different moves and makes me more confident as a climber and increases the chances of onsighting a route."

Peer teaching. Observations of students providing each other with beta or teaching each other climbing moves were numerous throughout the semester. The following interview statement from an experienced climber describes one of the more memorable instances of peer teaching:

> We taught the other school how to top rope which kind of made us more aware of how to teach it to someone, . . . we already know how to top rope confidently and we even know how to teach it to other people, and it makes you feel so much better about yourself if you're teaching someone how and you know exactly how to do everything.

Discussion

The results of this study confirm and extend the research on self-efficacy and rock climbing pedagogy. All three themes emphasize that the contributions of the climbing program to self-efficacy are most effective when learning activities take place in a safe and collaborative environment and are meaningful, diversified, individualized, and progressively challenging.

Creating a Safe and Collaborative Learning Environment

Situating the entire climbing program within an expectation of collaboration and safety afforded students the opportunity to thrive in the learning environment. There was an obvious emphasis on safety at the beginning of a climbing program. In addition, groups were monitored and encouraged for utilizing collaborative practices (e.g., providing each other with beta and encouragements).

In a review of the benefits of rock climbing, Siegel and Fryer (2015) suggested that the use of rock climbing in physical education programs can lead to positive benefits in the social domain. It was apparent that the social aspect was critical to the positive and collaborative learning environment in this program. For example, the class was often organized in small groups, peer teaching was regularly utilized, and bouldering was done in pairs.

Providing Meaningful Learning Activities

Striving to provide meaningful objectives allowed students to practice techniques that are useful for the type of challenge they were confronted with (e.g., teachers provided activities to work on heel-hooking only when students were climbing difficult overhanging climbing routes). Congruent with the findings of Sarrazin and Famose (2005), goal setting was more effective when goals were meaningful, for example, one student was motivated by the goal of meeting the requirements for becoming a rock climbing instructor.

Providing a diversity of learning activities. The themes emphasized the need for diverse learning activities. Climbers in this study reported negative affective states when climbing at a gym with higher bouldering problems. This is consistent with the increased anxiety levels that followed alterations in heights as discussed by Giles et al. (2014). Experiencing a variety of climbing facilities, however,

improved the climbing self-efficacy of students when returning to their school climbing facility. Although climbing self-efficacy may initially diminish in a new environment, providing a diversity of learning activities appears to benefit the long-term climbing self-efficacy of students.

Individualizing learning activities. Individualizing learning activities increased the likelihood that the needs of more climbers were met. For example, more experienced students were encouraged to attempt more difficult lead climbing routes and share their knowledge with novice climbers. Contrary to the findings of Harrison and McGuire (2006), participants stated that having more individualized climbing models who were similar in height, age, or climbing proficiency to the observer made it easier to relate to the success of the model and develop climbing self-efficacy.

Providing progressively challenging learning activities. Cordle et al. (2016) identified mastery experiences as the most influential source of self-efficacy. Similar findings were echoed in this study. Students claimed that practicing specific climbing techniques and being successful at easier climbing drills or activities allowed them to attempt more challenging routes. Providing learning activities to students in a progressively challenging format allows mastery experiences and consequently increases in self-efficacy. For example, students should be provided opportunities to fall on top-rope before attempting progressively larger falls on lead.

Conclusions

The thematic analysis provided insight into (a) the type of learning environment conducive to improving climbing self-efficacy, (b) the influence of the sources of self-efficacy, and (c) the activities that were more efficient for developing student climbing self-efficacy. According to the statements of students, perceived climbing self-efficacy was enhanced when learning activities were meaningful, diversified, individualized, progressively challenging, and took place in a safe and collaborative environment.

Limitations

As a case study, this research gathered insight from a practical setting within one high school rock climbing program. The practitioner needs to ensure that the circumstances of the case study are

similar in nature to that of his or her own physical education class. To be confident in the results, we followed recommended qualitative data collection and analysis methods that allowed us to feel confident in the trustworthiness of our results. However, we also acknowledge that case study design has inherent limits, and future studies should endeavor to include quantitative and/or mixed methods research designs to complement and extend this study.

Implications

The findings of this case study are useful for informing the designers of physical education programs to better meet the needs of students interested in rock climbing or other adventure physical activities. This study advanced theoretical knowledge by exploring how sources of self-efficacy can be translated into learning activities. Considering the overwhelming statements provided regarding mastery experiences relative to other sources of self-efficacy, mastery experiences appeared to be the most influential source of self-efficacy in this program. Affective states were an influential and mostly debilitating source of self-efficacy within this rock climbing program.

Higher levels of self-efficacy can lead to greater motivation for continued participation in rock climbing (Gómez et al., 2007). This could be indicated by participation in climbing activities outside of school hours. A future study can investigate the effect of participation in climbing programs on motivations to pursue climbing independently. Future research can also investigate how climbing self-efficacy can translate to generalized self-efficacy.

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