Implementing a Strength Training Program at a Small College

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THOMAS COLLEGE IS A SMALL NAIA Division 2 School in Thomasville, Georgia. In the fall of 1993 the college had its first season of intercollegiate athletics. The teams included baseball, women's softball, golf, tennis, and soccer. As a small school (765 students), Thomas College did not have any facilities for strength training or weight training classes that could be offered in the physical education curriculum.

This is when South Georgia Neurological Institute intervened to help the school’s athletic program get started. The institute's services include neurosurgery, neurology, and rehabilitation. The rehab division comprises a 10,000-sq-ft facility that includes selectorized training equipment, free weights, dumbbells, and medicine balls.

While equipment is limited compared to what would be found in a typical college weight room, it was felt that with proper use of equipment and creative program design, the athletic teams could receive adequate strength training to help them prepare for their season.

With the Athletic and Physical Education Departments working together, Thomas College's first physical education weight training class was formalized in January 1994. By offering this class, both departments felt that several needs could be met.

The credit hours obtained from this class helped meet standards for the PE curriculum. It was also felt that students majoring in other fields could benefit from this popular elective. The Athletic Department saw this as a win-win situation for their athletes. Athletes would get the benefit of a strength program as well as credit toward their degree. All who participated received 3 credit hours.

The first class consisted of 36 baseball players. This was an unusually large number of athletes to work with at one time, especially given the limited equipment available. As a former assistant strength coach at Samford University, I realized the importance of proper supervision and coach-to-player ratio. Wes Harrison, the baseball coach, knew the importance of strength training and did not want to leave anyone out of the class; he agreed to help supervise each training session.

In view of the large number of participants and the limited equipment, the question was, could a training effect be induced? We were also limited by the structure of the class itself: it met 2 days a week in a 1-1/4-hour time block.

Available equipment included 13 individual selectorized pieces of BodyMasters weight equipment. Free-weight apparatus consisted of one flat bench, one incline bench, one Smith machine, one utility bench, one lat machine, and dumbbells ranging from 5 to 60 lbs.

Equipment was arranged to place 18 athletes in one area of the building and 18 in a separate area. Players were assigned to 12 workout groups of 3 per group. They performed 12 exercises each workout. Exercises were divided into 4 clusters: lower body, torso, upper body, and supplemental. The clusters were grouped by area to include lower body and torso
together, upper body and supplemental together, as follows:

- **Lower Body**
  - leg extensions
  - leg curls
  - leg press
- **Torso**
  - back extensions
  - abdominal curl
  - rotary torso
- **Upper Body**
  - incline press
  - lat pulldown
  - upright row
- **Supplemental**
  - rotator cuff
  - squat clean (dumbbells)
  - leg raises

Three workout groups were assigned to each cluster. Each group was given a time frame for completing the designated number of sets for each exercise before rotating to the next exercise. Program design consisted of 2 sets per exercise, 10 to 12 reps on most exercises; however, 15 to 20 reps were incorporated into leg raises and abdominal curls.

Weights were increased weekly either by a percentage in which they progressed from 50% of 1-RM at Week 1 to 95% 1-RM during the last week, or in 5- to 10-lb increments, depending on the exercise. To avoid confusion, players rotated on a given command. After a cluster was completed, lower body would rotate to torso and vice versa. Upper body would rotate to supplemental and vice versa. When 2 clusters were completed in a designated area, groups would switch to the other area to complete the circuit.

After 10 weeks of training, tests were administered to determine training effects. Considering the large number of athletes training, the low volume of training per week, and limited equipment, the results were satisfactory. A total of 82% of the team improved in upper and lower body strength.

Strength increases were ascertained by testing 1-RM on the leg press and incline press. These were each tested during the 1st week of class and again at the end of the quarter. The percent increase on each lift was added together and divided by 2 to determine the composite strength increase. Bonus points were added to the final grade based on percentage points achieved during testing. Strength increases grouped by percentage of team members are summarized below:

- 1 to 5%: 25%
- 6 to 10%: 14%
- 11 to 15%: 25%
- 16 to 20%: 11%
- 20%+ 7%

While this was not the optimal program for a baseball team’s pre-season strength training, nor in terms of the large number of participants, it did increase strength levels for most players. Coach Harrison felt the training enhanced his team’s performance during their 1st year of competition.

After the completion of this program and collaboration with the athletic director, it was decided to restrict the class to fewer students so they could receive more individualized attention. Hence the women’s softball team enrolled in PED 135 (weight training).

The program was designed in cluster fashion with 12 exercises to be completed each workout. The clusters were close to each other, which made for more efficient instruction. A greater variety of exercises were prescribed for the softball team so that different exercises would be done on different days.

Athletes were grouped by two’s to form 6 pairs and rotated from cluster to cluster as the baseball team did. Exercises from each cluster that included 2 workouts for upper body and shoulders to provide program variation are listed in Table 1.

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<thead>
<tr>
<th>Exercise</th>
<th>Upper Body</th>
<th>Workout 1</th>
<th>Lower Body</th>
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<tbody>
<tr>
<td>Body Masters bench press</td>
<td>Dumbbell incline</td>
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<td>Leg extension</td>
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<tr>
<td>Machine shrugs</td>
<td>Dumbbell shrugs</td>
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<td>Leg curls</td>
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<tr>
<td>Low cable pull</td>
<td>Lat pulldowns</td>
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<td>Leg presses</td>
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<td>Lunges</td>
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<table>
<thead>
<tr>
<th>Exercise</th>
<th>Shoulders &amp; Arms</th>
<th>Workout 1</th>
<th>Workout 2</th>
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</thead>
<tbody>
<tr>
<td>Side lateral raises</td>
<td>Front raises</td>
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<tr>
<td>Arm curls</td>
<td>Hammer curls</td>
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<td>Triceps extension</td>
<td>Pushdowns</td>
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<table>
<thead>
<tr>
<th>Exercise</th>
<th>Torso</th>
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<tbody>
<tr>
<td>Back extensions</td>
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<tr>
<td>Abdominal curl</td>
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<td>Rotary torso</td>
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<td>Medicine ball twists</td>
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</tbody>
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Table 1
Thomas College Women’s Softball Strength Program

June 1996
Strength and Conditioning
45-sec to 1-min rest periods between sets, but longer rest periods were incorporated as intensities increased on multijoint exercises.

After 10 weeks of training twice a week in 1-1/4-hr sessions, upper and lower body strength was assessed on the BodyMasters bench press and leg press machines. All participants showed increases in strength. Strength increases grouped by percentage of team members is summarized below:

- 1 to 10%: 27%
- 11 to 20%: 18%
- 21 to 30%: 18%
- 31 to 40%: 36%

As Thomas College embarks on its athletic endeavors, there will be continued efforts to provide year-round strength training programs for athletes. Thanks to the availability of community resources, the college has been able to take the first step in making strength training a reality for its athletes.

Tony A. Bridges is Director of Industrial Rehabilitation at Rehab Associates in Montgomery, Alabama. When this article was written he was Director of South Georgia Neurological Institute Rehabilitation Services as well as an instructor at Thomas College.

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