KNR 497: Some questions to “tune in” to critiquing research

1. For each of the abstracts shown below,
   a. identify the independent variable(s) and the dependent variable(s)
   b. extract information about the external validity of the study (what are the settings, sample and time restrictions of the study, and what is the intended generalization)
   c. extract information about the construct validity of the study (what are the constructs, do they seem to match the intended idea of what the researcher wants to measure).
   d. extract information about the internal validity of the study (is there any attempt at causal inference from the study’s findings, and is there good control over alternative explanations for any causal inference arising from the study).

A. The purpose of the study was to examine the relationship between goal setting and motivation in adult exercise participants. A total of 300 male exercisers recruited from the ISU recreation center participated in the study. Half of the participants were randomly assigned to an intervention group while the other half were assigned to a control group. Those in the intervention group were provided a 2 hour seminar on effective goal setting strategies at the beginning of the fall 2005 semester, and meet with the researcher each week during the semester to talk about their progress. Throughout the semester all 300 participants were asked to complete a weekly log of their physical activity participation. Results of the study indicated that those who received the goal setting intervention were more motivated across the semester, in that they reported greater physical activity participation in terms of the total number of exercise sessions and the total amount of time (minutes) they exercised during the 15 weeks. These finding indicate that goal setting is an effective strategy to battle declining physical activity participation that occurs with age.

B. An exercise physiologist is interested in studying the effect of a core strength training program on the competitive performance of elite athletes. To do this, he selected two female gymnastics teams from separate Midwestern high schools, and obtained permission from the coaches and athletic directors of each team to include them in the study. Each team was followed over a period covering two full seasons. After the first season was completed, one of these teams was given the core strength training program over a 3-month period before the second season of competition began. The training involved teaching core strength training techniques to the athletes and encouraging the athletes to use these techniques daily for at least 5 minutes before practices. The other team (i.e., the control) received no training at any point of the study. The researcher expected to find that team given training would perform better than the team not given this training. Performance was assessed through the teams’ win-loss record during regular season competition. Results indicated that the team who received the intervention performed significantly worse than the control team (i.e., winning 1 out of 10 meets versus 4 out of 10) during the first season. The win-loss record for both teams increased during the second season; however the athletes receiving the training had a greater increase. Specifically, the control group won 5 of 10 meets during the season, whereas the intervention group won 6 out of 10. Based on these results, the researcher claimed that core strength training is effective for increasing performance in elite athletes.