

# The Behavioral Assessment of Parents and Coaches at Youth Sports: Validity and Reliability

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## Abstract

*A behavioral assessment system for scoring the behaviors of parents and coaches at youth sports games is described within this paper. The Youth Sports Behavior Assessment System (YSBAS) contains nine behavioral categories describing behaviors commonly seen during youth sports. The developmental process of YSBAS and the observer-training program are detailed. Twenty-eight undergraduates were trained to observe both parents and coaches during youth sports games. These observers attained a mean inter-rater reliability coefficient of .93 (range = .79 to .98). Results of multiple reliability studies disclosed that high scorer accuracy and inter-rater reliability can be attained using this behavior assessment system. The potential use of this system for evaluating the effectiveness of coaching training programs and parent youth sports orientation programs is discussed.*

Very little research and applied work on behavior assessment within physical education pedagogy, youth sports, and coaching preparation programs has been conducted over the past decade. The limited research conducted has been generated by a few individuals over the past three decades and represents strong implications for coaching education and pedagogy (Rushall, 1977; Smith, Smoll, & Hunt, 1977; Langedorf, 1979; Quarterman, 1980; McKenzie, 1981; Rushall, 1981; Gray, 1989; Lacy & Goldstein, 1990; Johnson & Franks, 1991; Douge & Hastie, 1993; Sharpe & Lounsbery, 1997). Researchers have found the physical education and sport settings to be appropriate areas to evaluate the verbal and

nonverbal communication interactions between teacher/coach and student/athlete in naturalistic environments.

Behavioral assessment utilized in experimental studies has concentrated on measuring changes in target behaviors in response to interventions, whether single-subject or group, and evaluating the effectiveness of behavioral interventions designed to modify coaching behaviors. Rushall (1977) developed a seven category observational coding system to evaluate sporting and physical education contexts. Among these categories were feedback and rewards; correcting and prohibiting; questioning; directing and informing; monitoring and attending; managing; and no activity. This early attempt at categorizing coaching behavior led other investigators to develop other categorical taxonomies of behavior.

Johnson and Franks (1991) developed the Coach Analysis Instrument to code the verbal behavior of coaches. The system utilized computer data-entry of observed behavior delineated in seven dimensions with various subcategories while scoring videotaped coaching behaviors. Inter-observer and intra-observer reliability were found to be in the medium to high range. Subsequent researchers proposed to establish behavioral correlates and antecedents with respect to the behavioral categories identified. Smith, Smoll and Hunt (1977) developed a more advanced behavioral assessment system based on the social learning theory. The Coaching Behavior Assessment System (CBAS) contains 12 categories divided into elicited (reactive) and emitted (spontaneous) behavior classes. The CBAS has been shown to be effective in detailing the

relationship between coaching behaviors and children's reactions to youth sport experiences (Smith, Smoll, & Curtis, 1978; Smith, Zane, Smoll, & Coppel, 1983; Smith & Smoll, 1990) at various levels of physical and psychological correlates. Each of the above mentioned behavior assessment systems provide mechanisms for evaluating and coding coaching behaviors for research and training application. However, a behavior assessment instrument that can readily be utilized to describe not only coaching behavior but also parental behavior at youth sports is the next progression. The purpose of this article is to describe the development of the Youth Sports Behavior Assessment System (YSBAS).

### **Development of the YSBAS**

The YSBAS was developed through a modification of the CBAS system. Whereas the CBAS was centered on reactive and spontaneous behavioral categories, the YSBAS took a literal perspective on parental and coach behavior at youth sports. In our particular need, both parents and coaches attended a 1-hour mandatory youth sports orientation training session. The purpose of this program was to emphasize the philosophy of the community parks and recreation department (a fun and positive environment for all) in an effort to eliminate all inappropriate, disruptive and violent behavior currently seen at youth sporting events across the country. Towards this end the parks and recreation administration solicited the local university and its Center for Sports Education to develop and implement a program and to evaluate the affect on parents and coaches at youth sports. Initial attempts at evaluating various behavior assessment systems previously discussed at youth sporting events in this community led to the following determinations. A behavior assessment system was needed that (a) could be easily taught to observers and that would hold high reliability; (b) could be used for both parents and coaches; (c) could have observation data quickly extracted for rapid and instantaneous feedback for parents and coaches; (d) could have its findings

quickly infused in on-going training sessions to enhance the youth sports program; (e) could put the findings in terms that parents, coaches and administrators could easily relate to and understand; and (f) could be used in any youth sports event.

### *Validity of Behavioral Categories*

This investigator and several graduate students attended 284 youth sport games in various sport leagues and involving several sports (soccer, 45; basketball, 62; baseball, 68; softball, 40; football, 55; volleyball, 14). At these games observers recorded as accurately as possible comments made by coaches and parents. On average 225 comments per game were recorded during the observations. The 284 comment recording sheets were then randomly separated into four groups of 71. One set of comment sheets was then used to connect comments with the CBAS descriptions.

Nine behavioral categories were derived from evaluating the comments with the CBAS. This experience coding parent and coach behaviors supported the selection of the behavior codes and their simplification. Figure 1 depicts the behavior assessment code sheet with descriptions for each of the nine categories. Note that the code sheet is broken into periods and time segments for use at a variety of sporting events.

**Positive Reinforcement**—A positive reaction either verbally or by nonverbal technique in response to a desirable and specific performance by a single player or group of players.

**Mistake Reinforcement**—Encouraging comments made to a player or group of players following a mistake. Emphasis is on encouraging player(s) to do better and not be concerned about error.

**Positive Technical Instruction**—Comments made to a player or players on technical skills or playing strategy not elicited by a mistake. Example, during game-play a parent might state to their child or to other players command suggestions indicating their location on the field or their attention to a certain player such as, "watch

number 7”, “you are playing too far out, move in closer”, and “keep your arms up”.

**Mistake Technical Instruction**—Comments made to a player or players providing technical instruction following a mistake. Example, after a ballplayer allows a hit ball to pass under his glove one might hear a parent state “turn your glove over and place it squarely on the ground”.

**Punishment**—Negative comments directed at a player or players following a mistake. Intent of comments is to express disapproval of player’s action and to personally berate.

**Keeping Control**—Comments made in response to players misbehaving on sidelines, or to the inattentiveness of the players during the game.

**General Encouragement**—Comments and/or nonverbal communications (i.e. clapping) made to a player or players towards nonspecific support and encouragement of their performance. Example, “good hustle”, “way to go Blackhawks”.

**Negative Comments**—Negative comments or nonverbal displays towards opposing players.

**Negative Comments to Coaches or Referees**—Negative comments made to coaches and/or referees during a game due to any circumstance. Comments made towards other parents are included in this category.

Based on the newly defined behavioral categories, the remaining three sets of comment sheets were given to three graduate students to evaluate. Their task was to divide the comments into the nine behavioral categories defined. Relying solely on the definitions provided, each comment was to be listed under a specific behavior category. Each graduate student evaluated each set individually. Construct validity was assessed by evaluating the percentage of matched agreement between comment and behavior category. A percentage of match between the three graduate students ranged from 99.1% to 100% (mean consistency score 99.6%).

#### *Observer Training*

The author developed a training program designed to establish high inter-rater reliability.

The training program consisted of (a) in-class lectures, readings and interactive case-studies to familiarize the undergraduates on topics of considerable relevance in youth sports (coaching styles, communication, leadership, positive reinforcement, motivation, anxiety, arousal, aggression, attributes of athletes and skill development) over a period of eight weeks; (b) group instruction on using the coding system through viewing and discussion of an audiovisual training module; (c) written tests matching video clips of actors portraying behaviors corresponding to specific behavior codes; (d) scoring videotaped examples of parents and coaches during live games and, (e) repeated practice using the YSBAS in real-life youth sports environments. Each observer was required to demonstrate a high degree of competence and expertise in using the YSBAS prior to actual field use for research purposes.

#### *Reliability Studies*

Four studies were conducted to assess the reliability of the YSBAS coding system and the effectiveness of the observer-training program. Components of these studies include developing a criterion videotape standard, training undergraduates to that standard and performing inter-observer agreement checks to ensure reliability of data. In the first study, 28 undergraduates completed an 18-item matching test connecting the appropriate behavior code with direct statements made by parents and coaches at youth sports events and recorded by the author. The testing followed detailed discussion and reflection on the behavior codes by the undergraduates. Scoring accuracy was assessed by evaluating the level of agreement with the scoring of the behaviors by the author. The number of scoring errors ranged from 0 to 4 with a mean of .61 errors per observer for an average agreement with expert scoring of 96.0%.

During the second study phase, the same 28 undergraduates viewed two videotaped sequences of 18 and 27 randomly ordered discrete behaviors performed by student actors from a local high

school drama club supervised by their class instructor. Each video clip depicted a game situation which was first verbally described and then portrayed as coach or parent behavior. Each of the nine YSBAS behavior codes was portrayed multiple times; twice in Video 1, and three times on Video 2. During viewing of the first video students were asked to reflect and analyze the depictions and relate what was presented in terms of the behavior codes. This was an attempt to familiarize the students with actual simulations of the behavior codes. During viewing of the second video students were asked to write down the corresponding behavior code portrayed in each of the 27 clips. Scoring accuracy defined by agreement with scoring by the investigator disclosed scoring errors ranging from 0 to 3 with a mean of .46 errors per observer resulting in an average agreement with expert scoring of 98.3%.

To assess consistency of scoring over time, both the 18-item matching test and the 27-item videotape were re-administered to the 28 undergraduates one week later. The students completed the second administration without knowledge of their performance on the first attempt. The index of consistency was the percentage of behaviors scored identically on the two test administrations. The percentages for the matching test ranged from 88.8% to 100% (mean consistency score 98.6%) and the percentages for the videotaped behavior-scoring test ranged from 83.3% to 100% (mean consistency score 98.1%).

To assess inter-rater reliability of the YSBAS a third video was utilized. In the video a volunteer basketball coach was videotaped during a live game. The coach was fitted with a microphone to accurately record every spoken word. The game lasted 47 minutes and involved 13 and 14 year old boys. Twenty-three of the trained observers sat and viewed the videotape simultaneously in the same classroom and scored the noted behaviors independently. An average of 174 behaviors was scored for the coach. The investigator scored the videotape independently to provide a basis for assessing the accuracy of the observers.

Reliability coefficients were established for all possible pairs between the trained observers resulting in 253 coefficients. The mean inter-rater reliability coefficient was +.93. Comparison of scoring between the investigator and the 23 observers disclosed reliability coefficients ranging from +.79 to +.98 with a mean reliability coefficient of +.91, indicating a high agreement across observers and the investigator.

### **Discussion**

The reliability studies demonstrate that observers can be trained to use the YSBAS system with a high degree of reliability and accuracy in coding behaviors at youth sports events displayed by parents and coaches. The high degree of reliability in scoring the YSBAS system is due in part to its simplified coding system. Rather than concentrating on factors that caused the observed behaviors (referred to previously as reactive and spontaneous behaviors), the coding system was designed to establish the generalized interaction behavior between parents and coaches; parents and players; and coaches and players. A coding system was needed to evaluate the effectiveness of the parent/coach orientation program on a global basis. With over a dozen recreation sites hosting league games simultaneously, a system was needed that could easily and quickly assess the behavior of parents and coaches at these games.

All parents and coaches participating in the league signed an IRB informed consent acknowledgement as part of their registration indicating that they would be observed throughout the season as part of the league's effort to develop a fun and positive environment. Parents would be observed as an audience group rather than individually. Observers would sit in or near the stands and record parental behavior by tallying the instances statements were made that apply to each of the nine behavior categories. Likewise, an observer would be situated close enough to a coach without interfering with the coaches actions (not within the athlete bench or dugout areas), but close enough to hear and see the behavior of the coach.

The name of the coach was not noted on the scoring sheet but rather only the age level and division of play (i.e., 12-13 year old boys, 10-11 year old girls). Similar notations were made for the parent audience observations. The observation in a naturalistic setting provided a great opportunity for behavioral assessment. A cautionary note must be made concerning the effect those being observed may have on data collection. While all parents and coaches were initially aware that they would be observed at every game throughout the season, the observers were instructed to be as discrete as possible. It was hoped that over time parents and coaches would forget about being observed and would display true behavioral characteristics.

A second potential error in scoring accuracy may occur due to drift in the observer's anticipated scoring. With time an observer may become biased towards particular behaviors and seek those behaviors more closely while overlooking other behaviors. To reduce this potential error it is recommended that observers at intervals of every 2-3 weeks retake the video-training program to reacquaint themselves with the correct interpretation of the behavior categories.

Each sport contains its own level of complexity and organization. Youth sports basketball is played indoors with limited parent seating areas, with teams placed on the opposite side of the court from the parents. In youth soccer, parents lay out blankets and lawn chairs all around the circumference of the field. In baseball and softball parents either sit in the bleachers situated around/behind home plate or setup lawn chairs near the dugouts. These complex seating scenarios present difficulty in coding behaviors of all parents during a single game. The observer was required to find a location that provided clarity of hearing and observation of all behaviors during a game. However, due to the simplicity of the behavior categories, a well-trained observer need only concentrate on the audience and their behavior and not on the game play itself to connect play to reactive responses. This is also

true of observing the coach. For clarity, an observer would be observing either the parents or the coach and not both simultaneously.

The YSBAS system has considerable potential not only in research but also in immediate application of results for affecting behavioral change in parents and coaches during youth sports events. In terms of research YSBAS can reliably and accurately evaluate the effectiveness of coaching training programs and parent orientation programs. Data can be collected on a weekly basis to ascertain behavioral changes over a season and from season to season. On an immediate basis, youth sports administrators can quickly reinforce appropriate behaviors by informing parents prior to a game of the league expectations and appropriate behavior guidelines. In this manner immediate change in behavior can be supported in any sport league.

The YSBAS system can also be used to help coaching education and pedagogy students better understand how communication at games and practices can impact performance and responses by players. This is a useful tool to connect appropriate communication strategies to coaching concepts such as motivation, reinforcement, anxiety reduction and encouragement.

The purpose of YSBAS was to develop an instrument that could be used with great ease and reliability to assess both parent and coach behavior at youth sporting events. With the high degree of reliability shown through extensive observer training, the behavior categories contained within provide clear data on communication interactions between parents, coaches and athletes. Continued research is proposed on using the YSBAS to evaluate other coaching training programs and parent training programs utilized across the country. Additionally, an evaluation of the CBAS alongside the YSBAS to determine concurrent agreement and greater insight to parent and coach behaviors is planned. Data collected during various sport seasons will be discussed in subsequent articles.

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Dr. Apache is on the faculty at the University of Nevada, Las Vegas.

Figure 1

The Youth Sports Behavior Assessment System coding sheet as used in actual data collection.

### Youth Sports Behavior Assessment System

**PR POSITIVE REINFORCEMENT**—A positive reaction either verbally or by nonverbal technique in response to a desirable and specific performance by a single player or group of players.

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**ME MISTAKE REINFORCEMENT**—Encouraging comments made to a player or group of players following a mistake. Emphasis is on encouraging player(s) to do better and not be concerned about error.

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**MTI MISTAKE TECHNICAL INSTRUCTION**—Comments made to a player or players providing technical instruction following a mistake. Example, “turn your glove over and place it squarely on the floor.”

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**P PUNISHMENT**—Negative comments directed at a player or players following a mistake. Intent of comments is to express disapproval of player’s action and to personally berate.

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**KC KEEPING CONTROL**—Comments made in response to players misbehaving on sidelines, or to the inattentiveness of the players during the game.

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**PTI POSITIVE TECHNICAL INSTRUCTION**—Comments made to a player or players on technical skills or playing strategy not elicited by a mistake. Example, “watch number 7”, “you are playing too far out, move in closer.”

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**GE GENERAL ENCOURAGEMENT**—Comments and/or nonverbal communications (i.e. clapping) made to a player or players toward nonspecific support and encouragement of their performance. Example, “good hustle,” “way to go Blackhawks.”

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**NC NEGATIVE COMMENTS**—Negative comments or nonverbal displays toward opposing players.

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.

**NCCR NEGATIVE COMMENTS TO COACHES OR REFEREES**—Negative comments made to coaches and/or referees during a game due to any circumstance. Comments made towards other parents are included in this category.

1-15 mins. <b>1st</b>	16-30 mins. <b>2nd</b>	31-45 mins. <b>3rd</b>	46-60 mins. <b>4th</b>	61-75 mins.