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Instrument Development of Self-Confidence for Badminton Athletes

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Standardized measurement with good reliability and validity values to assess levels of self-confidence of badminton athletes is not yet available in Indonesia. The purpose of this study was to develop such measurement, applicable to the condition of athletes in Indonesia. Subjects (N = 60) were badminton athletes and PBSI coaches in Kabupaten Pidie Aceh Province. The process included two stages: (1) collection of item pool and (2) screening of item pool with Q-sort method. The measurement was then tested on 172 athletes from PBSI Kabupaten Pidie Aceh Province. Data was analyzed through tests for validity, reliability, and factor analysis. Results showed that badminton athlete's self-confidence measurement consisting of five factors and 38 items is valid and reliable, with index scores of .614 and .872 for validity and reliability respectively.

Keywords: development, measurement, self-confidence

Alat ukur baku dengan tingkat validitas dan reliabilitas yang baik untuk mengukur tingkat kepercayaaan diri atlet bulutangkis belum ada di Indonesia. Tujuan penelitian ini untuk mengembangkan alat ukur kepercayaan diri atlet cabang bulutangkis yang memiliki tingkat validitas dan realibiltas yang baik dan dapat diterapkan sesuai kondisi atlet Indonesia. Subjek penelitian (N = 60) atlet bulutangkis dan pelatih PBSI Kabupaten Pidie Provinsi Aceh. Proses pembuatan alat ukur kepercayaan diri atlet bulutangkis yaitu meliputi dua tahap (1) pengumpulan butir-butir *(item pool)*, dan (2) pemilihan butir-butir (*screening of item pool*) dengan metode Q-sort. Selanjutnya alat ukur ini diuji coba pada 172 atlet PBSI Kabupaten Pidie Provinsi Aceh. Data dianalisis melalui pengujian validitas, reliabilitas, dan analisis faktor. Hasil penelitian bahwa skala kepercayaan diri atlet bulutangkis yang terdiri atas lima faktor dan 38 butir pernyataan merupakan alat ukur yang valid dan memiliki tingkat kesahihan yang tinggi dengan indeks .614 dan reliabel yang memiliki tingkat keterandalan yang tinggi dengan indeks .872 yang dapat digunakan untuk mengukur kepercayaan diri atlet bulutangkis.

Kata kunci: perkembangan, pengukuran, kepercayaan diri

In every sporting activity, physical and mental conditions as well as technique are the main priorities. Synergistic involvement of physical, mental, and technical elements will produce optimal results. Bompa (1983) stated that there are four main aspects that need to be prepared for sports training, including badminton, which are: (a) physical preparation, (b) technical preparation, (c) tactical preparation, and (d) psychological preparation.

One way to examine an athlete's mental condition is to measure their level of self-confidence. Thus, a valid and reliable measurement for self-confidence is needed. The purpose of the current study is to develop a standardized, valid, and reliable measurement to examine the level of self-confidence in badminton athletes. This was based on earlier observations in several province badminton championships, which revealed a low self-confidence of the participants. To convince these assumptions a serious survey/measurement should be conducted immediately.

A special development of such a measurement on self-confidence for badminton athletes is in line with what Vealey (1986) proposed that in developing a self-confidence model as such in sport, one should take care

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of the sport specificity and individual differences in personalities and behavior.

Measurement Tool

A measurement tool is used to collect data about a variable to express facts into data (Sugiyono, 2012). There are various types of variables and methods to collect data, and thus there exist many different types of research measurement. According to the type of variable, instruments can be classified into two types: (1) instruments to measure variables with nominal and ordinal scales (qualitative data) and (2) instruments to measure variables interval and ratio scales (quantitative data).

Sugiyono (2012) stated that the starting point of developing a measurement tool is to decide which variables will be researched. From there, an operational definition for each variable will be made and an indicator of measurement will be decided. This indicator will then be elaborated into questions or statements.

Development of a Measurement Tool

Muljono (2002) explained that to understand the creation and development of a measurement tool, researchers need to follow these points:

(1) From a synthesis of theories related to the measured variables, a construct should be formulated. The construct is, in essence, an understanding of a concept formulated by the researcher;

(2) From the construct, variable dimensions and indicators should be developed, explicitly referring to the formulated definition in the previous step;

(3) Make a sample measurement in a specification table that includes dimension, indicator, number, and amount of items for each dimension and indicator;

(4) Establishing magnitude or parameter in the form of a continuum from one polar opposite to another, for example from low to high, negative to positive, authoritative to democratic, or dependent to independent;

(5) Writing instrument items in the form of questions or statement. These usually consist of two groups: positive items and negative items. Positive items are statements referring to conditions, behavior, or perception approaching positive end, while negative items are those referring to conditions, behavior, or perception approaching the negative end;

(6) Written items become the concept of an instrument that needed to undergo a process of theoretical and empirical validation;

(7) The first step of validation is theoretical validation, which is from expert examination or from a panel that in essence examines instrument items;

(8) Revision based on suggestions of experts or results of panel findings;

(9) Once the instrument is theoretically valid, it will be multiplied (albeit in a very limited number) for experimental purposes;

(10) Measurement testing on the field is part of empirical validation. The measurement will be given to a number of respondents that have a similar characteristic to the population in the research. Response from this sample is an empirical data that will be analyzed to determine the measurement tool's empirical validity;

(11) Validity testing is done using internal and external criteria. An internal criterion is the instrument itself. On the other hand, an external criterion is an instrument or result of measurement outside the instrument that was chosen to be a criterion;

(12) Based on the criteria, a conclusion regarding whether an item or a measurement is valid will be obtained. When using internal criterion, which is the total score of criteria instrument, then the decision to regard an item as valid or not is called item analysis. When using external criteria, which is another instrument outside of that which is used as a criterion, then the decision is with regards to the validity of the measurement tool as a whole;

(13) For internal validity, based on item analysis, items that are not valid will be omitted or modified to be tested further, whereas valid items will be built into a measurement to examine content validity based on the sample. If content validity is achieved, the final version of the instrument will be used to measure the research variable.

Validity and Reliability of a Measurement Tool

Suryabrata (1998) stated that criterion validity showed a relationship between the scores of one measurement tool with an independent external criterion that can be used to measure the behavior or characteristic of interest. Furthermore, Suryabrata (1998) explained that content validity points to the representativeness in the loading of a measurement tool, while construct validity showed the extent to which a test measures the specific properties that form the basis of the test.

Reliability refers to the extent to which a measurement will yield the same result after repeated testing. Sugiyono (2012) stated that reliability is related to

the accuracy of an instrument in measuring what it is supposed to measure, the accuracy of the results, and how accurate the results will be should the test be repeated in the future.

A reliable measure will produce results that are stable and consistent. Instrumental reliability is a prerequisite that needs to be met to provide accuracy even though the instrument will be used more than once. The use of a valid and reliable measurement in data collection will yield valid and reliable results.

Self-Confidence

Self-confidence is defined as the belief on one's ability and the realization that one's ability can be used to the best of the individual's ability. Self-confidence is often related with feelings of happiness, enthusiasm, joy, and sense of control (Davies, 2004).

Self-confidence is a relatively stable evaluation of the self regarding skills, ability, leadership, initiative, and other behaviors and condition related to the feelings of an individual. Self-confidence is the main resource for self-development and self-actualization. Lack of self-confidence will inhibit the development of a person's potential and will make a person more pessimistic when facing challenges. Self-confidence gives strength to a person to rely on his/her own ability and depend less on other people (Hakim, 1992).

Davies (2004) stated that a majority of people regard self-confidence as belief in one's ability, belief that one leads a purposeful life, and belief that with willpower they will be able to do what they want and what they planned, as well as the ability to accept oneself positively despite not being able to meet their own expectations. Kumara (1998) pointed out that self-confidence is a characteristic of a creative person and those people usually strongly believe their own abilities.

Chaplin (1998) stated that self-confidence along with confidence gained from other people is useful to self development. A self-confident person will act with conviction and lacks doubt. Self-confidence is also related to optimism, lack of worry, creativity, honesty, and self adjustment.

Self-confidence is a quality found in many aspects, including sports. In this area, self-confidence can be related to qualities such as mental toughness, calmness, belief, and bravery. These qualities are often used to describe a successful person. Studies have shown that success is influenced by a person's level of self-confidence (Covassin & Pero, 2004; Hays, Maynard, Thomas, & Bawden, 2007; Hays, Thomas, Maynard, & Bawden, 2009). Athletes themselves admit that belief influences their outlook through their mind, behavior, and emotion.

A study by Hartanti (2004) showed that self-confidence is a psychological aspect that influences an athlete's achievement. Setyobroto (2002) explained that without a high level of self-confidence, athletes may not gain a high level of achievement, due to the relationship between self-confidence and motivation to succeed. Self-confidence is the belief that one can achieve a certain target; those with high achievement will be more self confident as a result.

Belief as a source of confidence plays a role in sporting success. Various studies showed that belief as the source of confidence help to build and increase a person's level of self-confidence (Bandura, 1977; Hays, Maynard, Thomas, & Bawden, 2007; Richey, R. C., & Nelson, W. A. (1996). Studies regarding the relationship between belief and performance showed that performance influences self-confidence.

Lack of self-confidence is a deterrent to high achievement; athletes who lack confidence will feel devastated over the smallest losses, which may result to frustration and despair when demanded to achieve more. Overconfidence, which occurs when an athlete deemed himself/herself to be more capable than he/she actually is, can also be detrimental to an athlete's achievement. An athlete may severely underestimate the ability of his/her opponent, and if they actually lost to said opponent, he/she will be more prone to stress and frustration. These issues were found to be closely related to an athlete's personality traits (Setyobroto, 2002).

Method

Type of Study

The current study is categorized as a development study with interview technique and Q-Sort method as was also stated by Richey and Nelson (1996) who explained that a development study is a systematic research about planning, developing, evaluating, process and products that need to have a consistent internal criteria.

Participants

This study involved athletes from Persatuan Bulutangkis Seluruh Indonesia (PBSI) from Pidie Regency,

Aceh Province. Athletes were taken only from the PBSI Pidie Regency, because so far they have shown to be one of the best organized and managed branches in Aceh, and having many clubs and members.

A total of 56 athletes and four coaches participated: eight athletes and four coaches for the interview stage, 48 athletes for the nominal group technique, and five experts for Q-Sort stage, and 172 badminton club athletes for the test stage. Subjects were recruited using clustered sampling with purposive sampling technique, which was based on the good achievement level of clubs, high frequency of competition attendance, and good club management.

Instrument

Badminton athletes' self-confidence scale consists of a number of statements describing the phenomenon and psychological states, consisting of components such as optimism, independence, sportsmanship, lack of worries, and self adjustment experienced by athletes during training and during matches. These psychological states indicate an athlete's self-confidence, and this scale was designed in the form of a self report (Stodolsky, 1985). The aim was to help subjects express their feelings and opinions about their self-confidence during practice and match.

Development Procedure

Self-confidence measurement of athletes from PBSI of Pidie Regency was presented in the form of statements with a Likert-type scoring value from 1–4. The usage of such Likert-type scale is expected to meet the prerequisite of a good research instrument which is accuracy, aside from validity and reliability (Hadi, 1991).

Athletes were asked to respond to the statements by choosing the most appropriate response scale that correctly reflected their feelings during practice and matches. The Likert-type scales were as follows: A score of 4 for Strong Agree (sangat sesuai = SS), 3 for Agree (sesuai = S), 2 for Somewhat Agree (agak sesuai = AS), and 1 for Disagree (tidak sesuai = TS). Table 1 presents the level of confidence for badminton athletes based on this scale.

The procedure of developing the measurement for badminton athlete's self-confidence followed the statement by Chaplin (1998) who stated that those with high self-confidence will behave firmly and without doubt, resulting in optimism, independence/ creativity, honesty, lack of worry and self adjustment.

The development of this self-confidence measurement for badminton athletes follows the steps described by Mutohir (1986), which were (1) creation of item pool, (2) screening of item pool, (3) construction of scales, and (4) test of measurement.

Pooling of items. Potential items were pooled using two methods: interview and nominal group technique. The interview session involved an initial study on eight athletes and four coaches. To make the interview process easier, the author created an interview guide. The interview was done to understand the psychological states experienced by athletes during training and during matches. Results from the interview were recorded and used as a supplementary material for the nominal group stage.

The second pooling of items was done using the nominal group technique. This technique gave each participant the opportunity to participate and discuss their opinions in turn. Each participant was asked to write his/her opinion on a sheet of paper. These opinions will be evaluated by other discussion members anonymously to ensure freedom of opinions (Sample, 1984).

Nominal group technique was conducted on 48 PBSI of Pidie Regency athletes. The steps for the technique have been simplified by Mutohir (1987) into two steps. First, athletes are gathered into one room and they each were asked to write on a sheet of paper the psychological feelings that they experience when practicing as well as during a match. Next, results of the interview between athletes and coaches were used in the group discussion. Interview results were further classified together by the author and Q-sort group members according to the

Table 1
Classification of Confidence Level of Athletes Based on Scores on Each Scale

Type of Instrument	Level of Self-Confidence				
	Very Low	Low	Moderate	High	Very High
Self-confidence Scale	11-38	39-67	68-95	96-123	124-152

five dimensions determined earlier.

Screening of item pool with Q-sort technique. According to Mutohir (1986, 1987, 1994) the screening process was conducted to refine items reflecting psychological states of self-confidence. A factor analysis was done following the Q-sort technique. First, the Q-sort technique was done by collecting each item that was written on a 5 x 5 cm paper. The Q-sort activity was done with the following steps: (1) determining members of the Q-sort group (the author was assisted by five experts consisting of sports education lecturers and counseling education lecturers, (2) providing explanation about the aim of Q-sort to members, and (3) screening of items from members for each dimension into three categories according to its importance, which were: "very important," "quite important," and "not important." The screening criterion was the clarity of the represented dimension and evaluation of degree of importance from a majority of Q-sort members (> 60%). From this stage, 64 items representing psychological states related to self-confidence were obtained and agreed upon.

Construction of scales. The measurement tool developed in this study was expected to function as a diagnostic feedback. Thus, despite its broad scope, such measurement still needed to contain specific items to measure athletes' psychological state during practice and in matches validly and reliably. The measurement was prepared through selected procedures so that all the process, starting from item pooling, selection, testing, value scale preparation, can be justified scientifically.

Scale testing. In the initial stages, dimensions of the scale were determined through factorial validity. The aim of this stage was to understand the main factors of self-confidence as a psychological state according to athletes. The preparation of the scale involved: (1) item analysis, (2) measurement reliability, (3) factor analysis, and (4) preparation of scoring scale. The four stages were conducted to produce a reliable scale to express the level of self-confidence of badminton athletes.

Data Analysis

Collected data was further categorized and analyzed quantitatively and qualitatively. Qualitative data was used to further explain the issues discussed, while quantitative data was analyzed using statistical techniques.

Items collected as an indicator of self-confidence obtained through interview, group process, selection, and categorization using Q-sort will be items used in the testing process. Results of the testing process will be analyzed with the following statistical technique: (a) item validity analysis using correlation coefficient, (b) reliability analysis with Cronbach's alpha, (c) factor analysis with "Principle Technique of Axis Factoring and Rotation Method Oblimin with Kaiser Normalization." All analysis was done digitally using SPSS (Nie, Hull, Jenkins, Steinbrenner, & Bent 1975).

Implementation Procedure

Research on the development of self-confidence measure for badminton athletes and coaches of PBSI Pidie Regency was conducted on May through October 2013. Observation was carried out on May 2013, interviews, nominal group discussions, Q-sort, and tests were conducted from September through October 2013.

First, the author contacted the manager of PBSI Pidie Regency to obtain permission as well as the athletes and coaches who will become the subject of the study. Participation was completely voluntary and a written agreement was obtained from each athlete before data was collected. The author met athletes and coaches on a scheduled date. Then, the author and some assistants went through the stages, which were the interview, the nominal group discussions, Q-sort, and categorization of self-confidence scale on participants on the testing stage.

Measurement Results

Results of the self-confidence measurement on badminton athletes tested on 172 athletes with 64 items yielded valid results. Reliability test with Space Saver formula showed that the five factors had a reliability coefficient between .614 and .872, whereas r table' with a db = 172 on a significance level of 5% were .041. Therefore, the five factors met the test criteria which stated that the observed r needs to be greater than or equal to the expected r. This indicated that the instrument yielded reliable results. The reliability coefficient results are presented in Table 2.

KMO test and Bartlett's test were further implemented to examine whether the variable and samples can be further analyzed. Results of the KMO and Bartlett's test were .734, with $p < .001$. Because the value was greater than .5 and significance value was far lower than .05, both variable and sample can be further analyzed.

Table 2
Summary of Reliability Coefficients (n = 172)

Factor	Optimistic	Independent	Sportsman-like	Not Worrisome	Self-Adaptive
Mean	53.16	55.67	53.06	74.38	42.90
Variance	15.880	17.671	12.862	31.934	12.726
Std Dev	3.985	4.204	3.586	5.651	3.567
N of variable	12	13	12	17	10
Case	172	172	172	172	172
rn Alpha	.826	.835	.773	.872	.614
R table	.105	.105	.105	.105	.105
Status	Reliable	Reliable	Reliable	Reliable	Reliable

Table 3
Results of Anti-image Matrices Test with $r_{table\ (.30)}$

No.	Factor	$r_{observed}$	Status of Factor
Anti–Image Correlation			
1	Optimistic	.659	Included
2	Independent	.647	Included
3	Sportsman-like	.742	Included
4	Not Worrisome	.768	Included
5	Self-Adaptable	.773	Included

Anti-image matrices test. Anti-image matrices or anti-image correlation test was done to determine items that were included and items that were not included in the factor. The results (presented in Table 3) revealed that all 64 items were included in the factor.

From a factor analysis of 64 items spread into five factors, the results showed that only 38 items had a factor loading of greater than .30 on the pattern matrix and also showed up on a number of factors. Those with a factor loading of less than .30 were omitted. The final results of items used on the scale of self-confidence of badminton athletes are presented in Table 4.

Results and Discussion

The development of a self-confidence scale for badminton athletes through collection of new items were conducted through the following steps: (1) interview, (2) nominal group technique, and (3) Q-sort group. The measurement was then tested. Results were further analyzed using validity, reliability, and factor analysis tests.

From the analysis of results, the following factors and items that reflect psychological state of self-confidence were included in the self-confidence scale for badminton athletes.

Optimistic factor. Based on the test results of validity, reliability, and factor analysis, only ten items from optimistic factor were included to the scale of self-confidence for badminton athletes. Such items include an athlete's belief about his/her own ability, ability to finish tasks, persistence, decisiveness, hope, confidence, effort, enthusiasm, faith and determination. Optimistic factor is the first factor in the scale and the correlation between item scores and factor scores fell on the range between .704 and .446.

Independence factor. Based on the test results of validity, reliability, and factor analysis, only seven items from the independent factor were included to the scale of self-confidence for badminton athletes. These items include the ability to do things on their own, doing independent efforts, following own will, being independent from other people. Independent factor is the second factor in the scale and the correlation between item scores and factor scores fell on the range between .604 and .436.

Sportsmanlike factor. Based on the test results of validity, reliability, and factor analysis, only nine items from sportsmanlike factor were included to the scale of self-confidence for badminton athletes. Such items include admitting mistakes, not blaming others when making mistakes, apologizing for mistakes, being open to suggestions, accepting risks, playing fair, accepting decisions, not underestimating opponents and accepting defeat. Sportsmanlike factor is the third factor in the scale and the correlation between item scores and factor scores fell on the range between .617 and .423

Not worrisome factor. Based on the test results of validity, reliability, and factor analysis, only seven items from not worrisome factor were included to the scale of self confidence for badminton athletes. The psychological qualities described in this scale involve the ability to voice out opinions, daring to enter tournaments, not being afraid in a match, not scared of how an opponent looks, having mental

Table 4
Results of Pattern Matrix Test

No.		Component				
		Opti-mistic	Inde-pendent	Sportsman-like	Not Worrisome	Self-Adaptable
1	Believes in one's own ability	.446				
2	Able to finish tasks	.460				
3	Does not give up easily	.487				
4	Decisive	.720				
5	Hopeful	.531				
6	Always confident	.459				
7	Persistent	.449				
8	Have a belief	.495				
9	Always enthusiastic	.704				
10	Determined	.490				
11	Does things with own ability		.534			
12	Does things independently		.451			
13	Follows own will		.604			
14	Does not rely on others		.551			
15	Trains in any condition		.497			
16	Always enthusiastic		.494			
17	Able to solve problems		.436			
18	Admits mistakes			.612		
19	Does not blame others for problems			.547		
20	Apologizes for mistakes			.510		
21	Open to suggestions			.617		
22	Accepts risks			.533		
23	Plays fair			.429		
24	Accepts decisions			.528		
25	Never underestimates opponents			.491		
26	Accepts defeat			.423		
27	Able to voice out opinions				.507	
28	Dares to participate in a tournament				.672	
29	Not afraid of matches				.553	
30	Not afraid of opponents				.521	
31	Strong mental ability				.530	
32	Does not get intimidated by strong opponents				.639	
33	Does not give up				.490	
34	Sociable					.824
35	Does not feel awkward					.581
36	Able to adapt oneself					.648
37	Not nervous					.533
38	Easy to get along with					.601

Note. Extraction Method: Principal Axis Factoring; Rotation Method: Oblimin with Kaiser Normalization

toughness, not intimated by the opponent's ability, and not easily giving up. Not worrisome factor is the fourth factor in this scale and the correlation between item scores and factor scores fell on a range between .672 and .490.

Self-adaptable factor. Based on the test results of validity, reliability, and factor analysis, only five items from self adaptable factors were included to the scale of self-confidence for badminton athletes. Psychological qualities reflected in athletes described by items on this factor include sociability, not feeling awkward, ability to adapt, not nervous, and easy

Table 5
Self-Confidence Measurement Scale for Badminton Athletes

No.	Statement	SS	S	AS	TS
1.	I believe in my own ability				
2.	I can do my tasks				
3.	I don't give up easily				
4.	I can make decisions				
5.	I have a good sense of hope/expectation				
6.	I am always confident				
7.	I always try my best				
8.	I have faith				
9.	I am always enthusiastic				
10.	I am determined				
11.	I do things with my own ability				
12.	I try to do things myself				
13.	I follow my own will				
14.	I don't depend on other people				
15.	I train in any condition				
16.	I keep my spirits up				
17.	I can solve problems				
18.	I admit my mistakes				
19.	I don't blame others for my mistakes				
20.	I apologize for my mistakes				
21.	I am open to suggestions				
22.	I accept risks				
23.	I play fair during matches				
24.	I accept decisions				
25.	I don't underestimate my opponents				
26.	I accept defeat				
27.	I am able to voice out my opinions				
28.	I dare to enter tournaments				
29.	I am not afraid of matches				
30.	I am not afraid of my opponent's looks				
31.	I am mentally tough				
32.	I am not intimidated by my opponents				
33.	I am persistent				
34.	I am sociable				
35.	I don't feel awkward in social situations				
36.	I can adjust myself				
37.	I am not nervous				
38.	I am easy to get along with				

Note. SS = Sangat Sesuai (Strong Agree), S = Sesuai (Agree), AS = Agak Sesuai (Somewhat Agree), and TS (Tak Sesuai=Disagree).

to get along with. This factor is the fifth factor on the self-confidence for badminton athlete's scale and the correlation between item scores and factor scores fell on a range between .824 and .446.

Based on refining, testing of validity and reliability, and factor analysis, it can be concluded that from

a pool of potential items designed to measure athlete's self-confidence, only 38 items spread across five different factors can be used. These items were shown to have good validity and reliability.

Considering the importance of having multiple dimensions to distinguish different aspects of self-confidence, this scale was planned based on five self-confidence dimensions specific to badminton athletes, which are optimistic, independent, sportsmanlike, not worrisome, and self-adaptable. Table 5 presents the final version of this scale.

Limitations, Conclusion, and Suggestions

Because this study was based on samples from only one regency PBSI, the generalizability of the results may be limited. Besides the factor analysis was limited to the stage of exploratory factor analysis (EFA), and has not yet involved confirmatory factor analysis (CFA) and the testing implementation was also still limited. However this study yielded a self-confidence measurement for badminton athletes consisting of five factors and 38 statements that were deemed valid and reliable. This measurement has been tested and replicated for validity and reliability purposes. Of course it should still be developed and tested on more general subjects so that a more generalizable set of results can be achieved, which could be validly and reliably applied to measure self-confidence of athletes in general.

A thorough literature search should be a next step, and also it's worthwhile to implement the Carolina Sport Confidence Inventory on the same testees to be compared with the results of this study. This particular measurement is conceptualized as three factors, which were dispositional optimism, perceived competence, and perceived control, with 13 items for each factor. The author also suggests later researchers to scrutinize Vealey's study (1986), who also developed specific steps to evaluate athlete's level of self-confidence in sports, which involves the use of Trait Sport Confidence Inventory (TSCI) and State Sport Confidence Inventory (SSCI).

References

Bandura, A. (1977). Self efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Bompa, T. O. (1983). *Theory and methodology of training*. Dubuque: Kendall/Hunt, Publishing Company.

Chaplin, J. P. (1998). *Kamus lengkap psikologi* (K. Kartono, Pengalih bhs). Jakarta: Raja Grafindo Persada.

Covassin, T., Pero, S. (2004). The relationship between self-confidence, mood state, and anxiety among collegiate tennis players. *Journal of Sport Behavior, 27*(3), 230-242.

Davies. (2004). *Meningkatkan rasa percaya diri*. Yogyakarta: Torrent Books.

Hadi, S. (1991). *Analisis butir untuk instrumen angket dan tes dan skala nilai*. Yogyakarta: Andi Offset.

Hakim (1992). *Kepribadian*. Jakarta; Erlangga.

Hartanti, Yuwanto L, Pambudi I, Zaenal T, & Lasmono, H. (2004). Aspek psikologis dan pencapaian prestasi atlet nasional Indonesia. *Anima Indonesian Psychological Journal*, *20*(1), 40-54.

Hays, K., Maynard, I., Thomas, O., & Bawden, M. (2007). Sources and types of confidence identified by world class sport performers. *Journal of Applied Sport Psychology*, *19*, 434-456.

Hays, K., Thomas, O., Maynard, I., & Bawden, M. (2009). The role of confidence in world class sport performance. *Journal of Sport Sciences*, *27*(11), 1185-1199.

Kumara, A. (1988). *The test of self-confidence* (Unpublished research report). Faculty of Psychology, Universitas Gadjah Mada.

Muljono, P. (2002). *Penyusunan dan pengembangan instrumen penelitian*. Paper presented at Peningkatan Suasana Akademik workshop. Department of Economics FIS-UNJ, August 5-9.

Mutohir, T. C. (1986). *The development and examination of student evaluation of teaching effectiveness in an Indonesian higher education setting* (Unpublished thesis). Macquarie University, Sydney.

Mutohir, T. C. (1987). *Laporan penelitian pengembangan instrumen evaluasi efektifitas pengajaran di perguruan tinggi (suatu rintisan)*. Surabaya: Pusat Penelitian IKIP Surabaya.

Mutohir, T. C. (1994). Evaluasi keefektifan pengajaran studi kasus di IKIP Surabaya. *Media Pendidikan dan Ilmu Pengetahuan*, *73*/Th XVI, 7.

Nie, N. H., Hull, C. H., Jenkins. J. G., Steinbrenner, K., & Bent, D. H. (1975). *Statistical package for social sciences*. New York: McGraw-Hill.

Richey, R. C., & Nelson, W. A. (1996). Developmental research. In D.H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (pp. 1213-1245). New York: Macmillan

Sample, J. A. (1984). Nominal group technique: An alternative to brainstorming. *Journal of Extension*

[On-line], *22*(2) Article 2IAW2. Retrieved from: http:/'/'www.joe.org/ foe 1984 march/ iw2.html.

Setyobroto, S. (2002). *Psikologi olahraga*. Jakarta: Universitas Negeri Jakarta.

Stodolsky, S. (1985). Telling math: Origin of math aversion and anxiety. *Educational Psychologist*, *3*, 125-133.

Sugiyono. (2012). *Metode penelitian kombinasi*. Bandung: CV. Alfabeta.

Suryabrata, S. (1998). *Pengembangan alat ukur psikologis*. Jakarta: Direktorat Jenderal Pendidikan Tinggi, Depdikbud.

Vealey, R. S. (1986). Conceptualization of sport confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport Psychology*, *8*, 221-246.

Wilson, R. C., Sullivan, P. J., Myers, N. D., & Feltz, D. L. (2004). Sources of sport confidence of master athletes. *Journal of Sport and Exercise Psychology*, *26*, 369-384.