



# PROCEEDING



## ASEAN FORUM AND INTERNATIONAL CONFERENCE ON SPORT SCIENCE AND TECHNOLOGY (AFICSST)

Bali, Indonesia, 8-11 August 2014

**“Bridging The Gap In The Advancement Of Sport Sciences  
And Technology Implementation Among South East Asia  
Countries”**

**The Deputy Asistant of Sport Science and Technology Division  
Deputy Minister of Elite Sports Enhancement  
Ministry of Youth and Sports**

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*Assalamu'alaikum warrahmatullahi wabarakatuh*

May we first made our highest praise and thank to Allah SWT, for His bless we able to gathered here on the prestigious occasion Asean Forum And International Conference On Sport Science And Technology (AFICSST) under the theme, "Bridging The Gap In The Advancement Of Sport Sciences And Technology Implementation Among South East Asia Countries". It is expected this event will create a venue for ASEAN sport scientists to learn, and understand each other's heterogeneous level of expertise and special feature in the area of sport sciences theories, their praxis, and in the seriousness level of their implementation.

This conference which hold by The Deputy Assistant of Sport Science and Technology Division Ministry of Youth and Sports, The Republic of Indonesia, it's also expected to become arena for exchange experiences and expertise and at least information regarding the best practices in the area of sport sciences and technology, to learn together from the experience of other advance countries who also gather in the event of conference in the respected sport disciplines, and to initiate a concrete cooperation and synergy between and among university academicians and students in the area of sport sciences and technology researches.

I would like to deliver our highest respect and appreciation to Minister of Youth and Sport of Republic of Indonesia and to all those who have helped bring this event, and it is my great pleasant to express my deep gratitude to our honourable guests, Dr. Bart Crum Retired Professor from the Free University, Amsterdam Netherlands; Mr. Randall L. Wilber, Ph.D., FACSM, Senior Sport Physiologist from USOC; Prof. Gareth Stratton, Ph.D. from Swansea University, United Kingdom; Prof. Martin Lames from Faculty for Sport and Health Science Technical University Munich, Germany; Mr. Kevin Ball, Ph.D. Biomechanist from ISEAL, Victoria University Australia; Prof. Hideaki Soya, Ph.D. from University of Tsukuba Japan; Assoc Prof, Ma Xindong, Ph.D. from Tsinghua University, Beijing, China; Prof. Hyo Jeong Kim, Ph.D. from KNSU, Seoul, Korea; Prof. Suebsai Boonveerabut, Ph.D. from Srinakharinwirot University, Thailand; Assoc Prof. Mohd Salleh Aman, Ph.D. from University of Malaya, Malaysia; and last but not least to Prof. Toho Cholik Mutohir, Ph.D. from State University of Surabaya Indonesia. I really expect that this meeting will be beneficial for all of us and have direct to the development of the sports.

Allow me to express my thank to the participants and audiences from Indonesia and other foreign countries who are enthusiastic to attending this precious conference. I do hope that all audiences will gain important values and colaborate it into our own fields and make crucials changes in the future. Beside that, I also convey thank to all of organizing committes who has gave their outstanding commitment for presenting this International conference.

*Wassalamu'alaikum warrahmatullahi wabarakatuh*

Sincerely yours,

**Prof. Dr. Djoko Pekik Irianto, M.Kes., AIFO.**

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## CONTENS

<b>COVER</b>	1
<b>PREFACE</b>	2
<b>SCIENTIFIC COMMITTEE</b>	3
<b>CONTENTS</b>	4
<b>MAIN SPEAKER</b>	
THE SCIENTIZATION OF HIGH-PERFORMANCE SPORT: LOOKING FOR BALANCE BETWEEN TECHNOLOGICAL PROGRESS AND ETHICAL RESPONSIBILITY Dr. Bart Crum, The Netherlands	11
THE ROLE OF COMPUTER SCIENCE IN THE ADVANCEMENT OF HIGH PERFORMANCE SPORT Prof. Dr. Martin Lames, TU München, Germany	19
USE OF SPORT SCIENCE AND TECHNOLOGY IN THE PREPARATION OF TEAM USA ATHLETES Randall L. Wilber, PhD, FACSM, Senior Sport Physiologist, Athlete Performance Lab, United States Olympic Committee, Colorado Springs, Colorado, USA	23
THE EFFECT OF GROWTH AND MATURATION ON PERFORMANCE: MESSAGES FOR TALENT DEVELOPMENT Professor Gareth Stratton, Applied Sports Technology Exercise Medicine (A-STEM) Research Centre, Swansea University: UK	25
CHANGES IN SERUM CARTILAGE OLIGOMERIC MATRIX PROTEIN (COMP), PLASMA CPK AND PLASMA hs-CRP IN RELATION TO RUNNING DISTANCE IN A MARATHON (42.195 KM) AND AN ULTRA-MARATHON (200 KM) RACE Hyo Jeong Kim, Yoon Hee Lee, & Chang Keun Kim, Associate Professor, Director of Aging, Research Center, Korea National Sport University, South Korea	26
SPORT SCIENCES AND TECHNOLOGY: CHALLENGES AND OPPORTUNITIES IN IMPROVING SPORT PERFORMANCE IN INDONESIA Toho Cholik Mutohir, Professor, Faculty of Sport Sciences, State University of Surabaya, Indonesia	32
USING BIOMECHANICS TO IMPROVE PERFORMANCE Kevin Ball, Institute of Sport, Exercise and Active Living (ISEAL) Victoria University, Melbourne Australia	39
POTENTIAL EFFECTS OF MILD EXERCISE ON THE BRAIN AND COGNITIVE PERFORMANCE: TRANSLATIONAL RESEARCH FROM ANIMAL TO HUMAN Hideaki Soya, Ph.D., Chairman, Laboratory of Exercise Biochemistry & Neuroendocrinology University of Tsukuba Faculty of Health & Sport Sciences, Tsukuba, Japan	43
IMPACT OF THE TALENT DEVELOPMENT ENVIRONMENT ON HIGH PERFORMANCE ATHLETES IN CHINA Ma Xindong & Wu Dongyi: Division of Sport Science & Physical Education, Tsinghua University, Beijing & The School of Social Sciences of Tsinghua University, Beijing	51

SPORT PSYCHOLOGY CONSULTING FOR THAI NATIONAL TEAM: SUCCESS AND CHALLENGE Suebsai Boonveerabut PhD, Department of Sport Science, Faculty of Physical Education, Srinakharinwirot University, Thailand	56
AN ASSESSMENT ON VARIOUS DISCIPLINES AND TECHNOLOGY OF SPORT SCIENCE IN MALAYSIA Mohd Salleh Aman, PhD Sport Centre, University of Malaya	60
 <b>ORAL PRESENTATION</b>	
 <b>Sport Biomechanic &amp; Technology</b>	
VIDEOTAPE FEEDBACK: A REWARDING TECHNIQUE TO IMPROVE KEDENG SPIKE IN SEPAKTAKRAW SPORT I Ketut Semarayasa & I Wayan Artanayasa, Ganesha University of Education, Indonesia	66
SOCCER GAME ANALYSIS WITH VISUAL BASIC PROGRAMMING Mohammad Faruk, State university of Surabaya, Indonesia	70
ELECTRIC POLE HIGH JUMP BASED ON ATMEGA16 MICROCONTROLLER USING DC MOTOR AND REMOTE SYSTEM TO SUPPORT SPORTS ACHIEVEMENT Nova Suparmanto, Widi Putra Guna, & Rizki Edi Juwanto, State University of Yogyakarta, Indonesia	74
A THREE-DIMENSIONAL ANALYSIS OF THE TENNIS SERVE Yadi Sunaryadi, Indonesia University of Education, Indonesia	80
 <b>Sport Exercise &amp; Health</b>	
THE EFFECT OF SINGLE SESSION AEROBIC EXERCISE WITH ERGOCYCLE TO BGL IN PATIENTS WITH TYPE 2 DIABETES MELLITUS Korina Wulandari & Wara Kushartanti, State University of Yogyakarta, Indonesia	84
THE EFFECT OF YOGAROBIC ON RECOVERY HEART RATE AND MENOPAUSE SYMPTOMS IN PERIMENOPAUSAL WOMENS BM. Wara Kushartanti, State University of Yogyakarta, Indonesia	89
ACTN3 GENE: A CANDIDATE GENE FOR SPORT PERFORMANCE (STUDY CASE OF INDONESIAN COMBAT SPORTS ATHLETES) Rachmah Laksmi Ambardini, State University of Yogyakarta, Indonesia	94
CORRELATION BETWEEN PHYSICAL ACTIVITIES AND ALIVE AGE ESTIMATION MEMBER OF AEROBIC GYMNASTICS STUDIOS IN SURABAYA Kunjung Ashadi, State University of Surabaya, Indonesia	99
THE IMPORTANCE OF VITAMIN D IN SPORTS Ni Luh Kadek Alit Arsani, Ganesha University of Education, Indonesia	105
THE ROLE OF VITAMIN C AND E AS ANTIOXIDANT IN EXERCISE Putu Adi Suputra & Made Suadnyani Pasek, Ganesha University Of Education, Indonesia	109
THE INFLUENCE OF SPORTSTART ON THE PERCEPTUAL MOTOR DEVELOPMENT OF EARLY AGE CHILDREN Dian Pujianto, Bengkulu University, Indonesia	115

ENERGY METABOLISM IN SPORTS I Nengah Sandi & Daniel Womsiwor, Udayana University, Indonesia	118
TRAINING METHODS TO INCREASE FOOTBALL PLAYER'S AGILITY (CASE STUDY IN SMK X DENPASAR) Daniel Womsiwor & I Nengah Sandi, Cenderawasih University, Indonesia	124
THE BALANCE TRAINING AND ANKLE SPRAINS IN BADMINTON PLAYERS (REVIEW) Sri Sumartiningsih, State University of Semarang, Indonesia	130
PSYCHOMOTOR THERAPY IN RELATED TO PHYSIOTHERAPY IN SPORT FOR PEOPLE DISABILITIES: A COMPILATION OF VISITING STUDY Bambang Abduljabar, Indonesia University of Education, Indonesia	136
THE EFFECT OF SPEED AGILITY AND QUICKNESS (SAQ) AND PLYOMETRIC ON SPEED AND AGILITY OF MALE FOOTBALL ATHLETES IN TADULAKO UNIVERSITY Didik Purwanto, Tadulako University, Indonesia	141
<b>Sport Psychology &amp; Education</b>	
MENTAL TOUGHNESS AND TEAMWORK ON WOMEN ATHLETES OF MARTIAL ART, GAMES, AND CONCENTRATION SPORTS (STUDY ON ATHLETES OF WEST JAVA NATIONAL OLYMPIC COMPETITION XIX REGIONAL TRAINING CENTRE) Nina Sutresna, Berliana, Ucup Yusup, Etor Suwardar, Suhana, Indonesia University of Education, Indonesia	147
THE EFFECTS OF PSYCHOLOGICAL ASPECTS TOWARDS INDIVIDUAL 100 METERS SPRINTER'S PERFORMANCE Miftakhul Jannah, State University of Surabaya, Indonesia	151
THE PRELIMINARY STUDY OF MENTAL IMAGERY FUNCTIONS IN BADMINTON BENGINNER ATHLETES Yusuf Hidayat & Sukadiyanto, Indonesia University of Education, Indonesia	156
THE IMPROVEMENT OF SELF-CONFIDENCE THROUGH THE IMAGERY TRAINING PROGRAM AMONG WUSHU ATHLETES IN CENTRAL JAVA Heny Setyawati, State University of Semarang, Indonesia	163
THE EFFECT PETTLEP IMAGERY ON ACCURACY RETURNING BADMINTON SERVICE Suwat Luangon, A. Siripatt, and S. Boonveerabut, Srinakharinwirot University, Thailand	167
STRUCTURE OF INTELLECTUAL ON BADMINTON SERVING IMAGERY ABILITY Nualtong Anuttarangoon, S. Boonveerabut, and A. Siripatt, Srinakharinwirot University, Thailand	171
LITERATURE REVIEW ABOUT IMAGERY ON PENCAK SILAT OF MATCH CATEGORY: A COMBINATION OF TWO THEORIES OF IMAGERY Kurniati Rahayuni, Malang State University, Indonesia	175
THE CONTRIBUTION OF PARENTING PATTERN AND SOCIAL ENDORSEMENT TOWARDS SWIMMING ATHLETES ACHIEVEMENT IN YOGYAKARTA SPECIAL DISTRICT Agus Supriyanto, State University of Yogyakarta, Indonesia	182
THE INFLUENCE OF INTEGRATED PSYCHOLOGICAL SKILL TRAINING IN ENHANCING SELF CONFIDENCE OF PPLP DKI JAKARTA TAEKWONDOIN Muhammad Syauqi Putra, University of Indonesia, Indonesia	186
ANXIETY CONTROL THROUGH THE ACTIVE MEDITATION IN HIKING PROGRAM Kardjono, Indonesia University of Education, Indonesia	190

MENTAL HEALTH BENEFITS OF PHYSICAL ACTIVITY AND SPORT PARTICIPATION Made Suadnyani Pasek, Putu Adi Suputra, Made Sri Dewi Lestari, Ganesha University of Education, Indonesia	193
IMAGERY EXERCISE IN GYMNASTICS MOTIVATION AND SELF CONFIDENCE Helmy Firmansyah, Indonesia University of Education, Indonesia	199
THE EFFECT OF PETTLEP IMAGERY ON BADMINTON SERVING ACCURACY Taviphop Peungsoonthonsirimas, A. Siripatt, and S. Boonveerabut, Srinakharinwirot University, Thailand	206
MANAGEMENT OF SPORT TOURISM AS A POTENTIAL FACTOR IN ORDER TO PREVENT SPIKE INCIDENCE OF HIV/AIDS IN BALI Made Kurnia Widiastuti, Putra Adnyana, Ni Putu Dewi Sri Wahyuni, Ganesha University of Education, Indonesia	211
<b>Sport Sociology, Philosophy &amp; Management</b>	
STAGNATION OF SPORT SCIENCES IN THE HEGEMONY OF POSITIVISM PARADIGMS (A REFLECTIVE STUDY UPON THE DEVELOPMENT OF SPORT SCIENCES STUDENT ATTAINMENT IN FACULTY OF SPORT SCIENCES, YOGYAKARTA STATE UNIVERSITY) M. Hamid Anwar & Hari Amirullah Rachman, State University of Yogyakarta, Indonesia	217
LOCAL WISDOM AND SPORTS TOURISM SYNERGY TO IMPROVE AN ECONOMIC VALUE I Ketut Sudiana, Ganesha University of Education, Indonesia	222
ANALIZING GRAND STRATEGY OF THE 2014 – 2024 NATIONAL SPORT PERFORMANCE DEVELOPMENT Wawan S. Suherman, State University of Yogyakarta, Indonesia	226
ASSESSMENT PHYSICAL FITNESS FOR TENNIS PLAYER Ngatman Soewito, State University of Yogyakarta, Indonesia	233
<b>Sport Talent &amp; Assessment</b>	
DEVELOPED LINEAR MODEL TO DETERMINE FITNESS CAPACITY IN SCREENING, COACHING AND TRAINING EVALUATION Bambang Purwanto, B. Pramono, Harliana Asnar E., Airlangga University, Indonesia	238
SPORT TALENT SEARCH IN SCHOOL (WAYS OF SEARCHING TALENTED ATHLETES) Hanik Liskustyawati & Sapta Kunta Purnama, Sebelas Maret University, Indonesia	243
PHYSICAL AND PSYCHOLOGICAL FACTOR AS POTENTIAL INDICATORS SPORT TALENT OF ROWING Nurkholis, State University of Surabaya, Indonesia	248
EXPERT VALIDITY OF FUTSAL SKILL TEST Agus Susworo Dwi Marhaendro, State University of Yogyakarta, Indonesia	256
ANALYSIS OF THE ABILITY WOMEN'S BASKETBALL PLAYERS IN LIMA BASKETBALL COMPETITION 2013-2014 USING FIBA LIVESTAT Budi Aryanto, State University of Yogyakarta, Indonesia	263
COMPARASION OF BODY COMPOSITION AND SOMATOTYPE CHARACTERISTICS OF SPRINTER ATHLETES AT AUE AND YSU Eddy Purnomo, Ria Lumintuarso, Norikatsu Kasuga, Hideki Suzuki, State University of Yogyakarta, Indonesia	268

FORMETRIC MEASUREMENT OF POSTURE AND SPINAL ALIGNMENT FOR SOUTH SULAWESI'S NATIONAL ATHLETES IN INDONESIA Muhammad Nadjib Bustan, Baharuddin Talib, Ians Aprilo, Khairil Anwar, State University of Makassar, Indonesia	274
ANTHROPOMETRIC, PHYSIOLOGICAL AND BIOMOTORIC PROFILES OF MALE JUNIOR SEPAK TAKRAW PLAYERS Nining Widyah Kusnanik, State University of Surabaya, Indonesia	278
EDUCABILITY STUDENT PROFILE MOTOR SKILLS EDUCATION HEALTH AND PHYSICAL RECREATION FACULTY OF SPORT AND HEALTH GANESHA EDUCATION UNIVERSITY I Wayan Artanayasa, Ganesha University of Education, Indonesia	282
DEVELOPING A MODEL OF EXERCISE FOR PERFORMANCE SPORTS QUALITY EVALUATIONS (EMLO) KONI NORTH SUMATRA PROVINCE Imran Akhmad, Suharjo, Rahma Dewi, State University of Medan, Indonesia	287
AUTHENTIC ASSESSMENT INSTRUMENT DEVELOPMENT FOR SKILL IN PHYSICAL EDUCATION, SPORT, AND HEALTH Hariadi, State University of Medan, Indonesia	294
FUNCTIONAL EVALUATION OF SHOULDER BASED ON CONSTANT SCORE ON PORDA JABAR BASEBALL TEAM Leonardo Lubis, Padjajaran University, Indonesia	301
<b>POSTER PRESENTATION</b>	
THE EFFECTIVENESS OF SIDE ARM THROW COMPARED WITH OVERHAND THROW IN SOFTBALL Fajar Awang Irawan, Semarang State University, Indonesia	307
CAPABILITY OF THE FUNCTIONAL MOVEMENT SCREEN IN PREDICTING INJURIES AMONG ATHLETES: A REVIEW Rex John G. Bawang, Benguet State University	311
THE EFFECT OF 2.5% GLUCOSE ADMINISTRATION TOWARD FUTSAL PLAYERS AEROBIC ENDURANCE IN TUNGGUL HITAM PADANG WEST SUMATERA Anton Komaini, State University of Padang, Indonesia	315
THE EFFECT OF PLYOMETRICS TRAINING TO ENHANCE LEG POWER FOR LAY UP PRACTISING (CASE STUDY IN BASKETBALL EXTRACURRICULLAR SMP NEGERI 1 SINGOSARI) Fuad Noor Heza, State University of Malang, Indonesia	319
STRENGTH AND CONDITIONING FOR 110 METER HURDLES Robin Darwin B. Tuliao	324
EFFECTS OF DYNAMIC AND STATIC STRETCHING ON THE SUBSEQUENT PITCHING PERFORMANCE IN COLLEGIATE BASEBALL PLAYERS Theresa May B. Garin	328
SOLUTION-FOCUSED BRIEF COUNSELING (SFBC) FOR SPORT ACHIEVEMENT MOTIVATION IN SPORTS COACHING EDUCATION Siti Hajar, Tunas Pembangunan University, Indonesia	333
POA-BASED SNAKES AND LADDERS GAME: IMPROVING ELEMENTARY STUDENTS' MULTILATERAL ABILITY Margono, Yogyakarta State University, Indonesia	337



THE EFFECTIVENESS OF FAIR PLAY REWARDS IN SPORTSMANSHIP, FAIR PLAY, AND CHARACTERS IN U12 SOCCER GAME Wachid Sugiharto, IKIP PGRI Palembang, Indonesia	343
SOCIAL INTERACTION AMONG FOOTBALL PLAYER ETHNO-PHENOMENOLOGY APPROACH AT PERSIBA BANTUL Komarudin, State University of Yogyakarta, Indonesia	350
RELATIONSHIP BETWEEN SPORT COMMITMENT AND ATHLETE BURNOUT AT RAGUNAN JUNIOR HIGH SCHOOL STUDENT ATHLETE Riwanto & Sri Fatmawati, University of Indonesia, Indonesia	357
HEALTH PROMOTING AND EXERCISE BEHAVIORS OF PEOPLE WITH PHYSICAL DISABILITIES IN THAILAND Apanchanit Siripatt, D. Suksom., S. Taweepornpathomkul, S. Khongprasert, and K. Srihirun, Srinakharinwirot University, Thailand	363
THE EFFECT OF FEEDING WITH DIFFERENT GLYCEMIC INDEXES ON OXIDATIVE STRESS OF COLLEGE ATHLETES Wilda Welis, State University of Padang, Indonesia	364

## EXPERT VALIDITY OF FUTSAL SKILL TEST

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### ABSTRACT

*The aim of this study was to assess the content validity of the Futsal Skill Test (FST). In order to achieve genuine validation, content validity ratio (CVR) was taken to formalize the FST's content validity. Procedure of the FST are passing, receiving, dribbling, and shooting respectively as quick as possible whereas mistakes is not tolerated in high percentage. As many as 10 coaches and 5 lectures involves as an expert in which the test validation depend on their integrity. The discussion is based upon data collected from the research instrument namely judgement sheet. The expert rates FST items in three options as follows: (a) essential; (b) useful; (c) not necessary. The data were analyse by means of content validity index (CVI). The results of the study showed that validity of the FST was .8644, meaning validity of the time taken and penalty time indicates .8912 and .8182 respectively. Therefore, it can be concluded that FST is a valid protocols to assess futsal skills performance.*

**Keywords:** Skill Test, Futsal, Content Validity.

### INTRODUCTION

Futsal is a FIFA regulated five-versus-five indoor football game played on a hard surface court. Futsal players cooperate with team member in pursuit of common aims, the principal ones being to score goals for the team when in possession of the ball, and to prevent goals being scored against the team when the opposing players have the ball (Travassos. et al, 2011). The players interact directly and concurrently to achieve an objective that involves team members facilitating the movement of the ball or a similar item in accordance with a set of rule. The coach may consider that the individual played well if he/she has contributed to executing the overall game plan (Reilly, 2007). So it takes the performance of each player to be able to support the team's performance. Performance players have a minimum standard that must be mastered. Every player must have the futsal skills as an indicator the futsal team players. It would appear that skilful performances are crucial to winning futsal matches.

A futsal player might have good patterns of movement but if he/she does not perform the right action at the right time then he/she becomes an almost useless player. Futsal players must be able to demonstrate techniques of receiving, passing, dribbling, and shooting as the circuit is limited by space and time. A farther aid to the coach attempts to get to know the need of the players is by using tests (Whorthington, 1984). There have been previous attempts at designing tests that purportedly measure futsal skill.

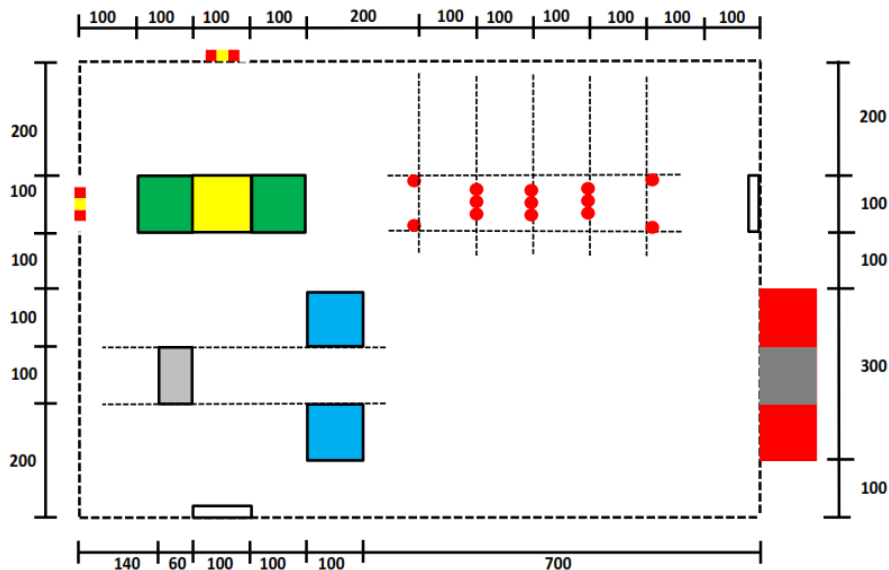
The test should have the same goals with the needs of coaches. So it is necessary to design a test to measure futsal skills that content test have been validated by coaches as expert. The test had content validity that expert judgments are used. In the motor skill test content, experts judge whether the movements needed to complete the skill test are representative of the movements required to perform well at that skill in applied skill performance situation (Rowe and Mahar, 2006). The Futsal Skill Test was developed to assess futsal skills, including passing, receiving, dribbling, shooting, and decision making within match-play. Thus, the aims of the present study were to assess the validity of the FST as research tools in study of futsal skills.

**METHODS**

The study subjects for this study are people who are experts in the soccer or futsal, namely lecturers and coaches. Ten coaches of the futsal team from districts in DIY are prepared to follow PORDA DIY at 2013. Five lecturers from Faculty of Sport, who has expertise in soccer or futsal. The research instrument is a judgments sheet of the instructions for the FST. The expert rates whether the item is “essential,” “useful,” or “not necessary” to operationalization of the test guidelines. Previously, experts are given the opportunity to read the guidelines and watch the video of the execution of the test. Content validity index (CVI) to determine an index of the content validity for the test as a whole (Shultz and Whitney, 2005). CVI was computed the averages content validity ratio (CVR) across all retained statements. This study used content validity ratio (CVR) by Lawshe (1975). The content validity to be accepted that CVI value equal to .70 or more.

**Layout of The Futsal Skill Test**

Figure 1 illustrates the layout of the FST. Test area needed free space 8 x 12 m. Prior to placement, two wooden rebound boards (1 x .4 m) as passing target, a goal (2 x 3 m), three passing areas (1 x 1 m), two shooting areas (1 x 1 m), a place for six balls (1 x .6 m), two dribbling pivot areas (1 x .2 m), and 13 cones (diameter .2 m). Before their placement, five colored passing target areas (white, red, yellow, red, and white; .4 x .2 m) were taped each rebound board. Shooting target area (dark; 1 x 2 m) was hanged on the middle of the goal.



**Figure 1. Diagrammatic representation of the Futsal Skill Test (FST)**

**Instructions for The Futsal Skill Test**

Participant started with the futsal ball by the centre passing area (yellow rectangle). The first perform; the participant was doing sequence of passes six times to the coloured target, and the first examiner started timing the test, using a hand-held stopwatch, from the moment the ball was passed at the first time. The second perform; the participant was strike dribbling to the pivot area, than dribbled back to the centre passing area again. The third perform; the participant was required sequence passes six times to the two coloured target by turns. The fourth perform; the participant was required dribbling zigzag to the other pivot area. The fifth perform; the participant are required sequence passes six times to the coloured target at the two passing area (green rectangle) by turns. The final perform; the participant was required shooting into

the net (goal) three times, two times with dominant leg and one with the other leg, at the two shooting areas (blue rectangle). If three balls had shot into the net two times with dominant leg and one time with the other leg, the shooting has been completed. But if it has not been able to shoot the three balls was given a chance up to seven balls. If seven balls have not been able into the net, the shooting has been also completed.

The first examiner started timing the test when the participant was kicked the ball and stopped timing test to the shooting has been completed. The second examiner was to record penalty time points accrued during trials. Penalty time was awarded for the following errors. Three second for handling the ball. Shooting errors are two second for missing goal, one second for hitting the bar and shooting out if the designated area, and a half second for hitting the middle target. Dribbling error is one second for touching the cone and pivot out of the designated area. Passing and receiving errors are one second for receiving and passing out the designated area and hitting the white target area, and a half second for hitting the red target area.

Furthermore, the players were informed that for best performance on the FST they would have to perform the test as quickly as possible whilst making the fewest mistakes. Score test such as time taken and penalty time in performing a series of tasks. Penalty manifested in a sentence with the addition of time, according to the mistakes made. So the total test score (performance time) is derived from the sum of the time that execution time and penalty time. The score test was the best score of the two trials.

## RESULTS

**Table1. CVR for Penalty Items**

Content Test	Penalty statement		CVR
Passing & Receiving (1 target, 1 area)	1 hitting the red target area passing	.5 s	1.0000
	2 hitting the white target area from passing	1 s	.8667
	3 receiving the ball from outside of the designated area	1 s	.7333
	4 passing the ball from outside of the designated area	1 s	.8667
Dribbling (straight)	5 contact the ball less than five times	1 s	.8667
	6 the pivot dribbling outside of the designated area	1 s	.8667
Passing & Receiving (2 target, 1 area)	7 hitting the red target area passing	.5 s	.7333
	8 hitting the white target area from passing	1 s	.8667
	9 receiving the ball from outside of the designated area	1 s	.6000
	10 passing the ball from outside of the designated area	1 s	.7333
Dribbling (zig-zag)	11 the ball touching any cone	1 s	1.0000
	12 the shoes touching any cone	1 s	.8667
	13 the pivot dribbling outside of the designated area	1 s	.6000
Passing & Receiving (1 target, 2 area)	14 hitting the red target area passing	.5 s	1.0000
	15 hitting the white target area from passing	1 s	1.0000
	16 receiving the ball from outside of the designated area	1 s	.6000
	17 passing the ball from outside of the designated area	1 s	.6000
Shooting	18 shooting the ball from outside of the designated area	1 s	1.0000
	19 shooting the ball with inside foot	1 s	*.0667
	20 hitting the middle target goal	.5 s	.7333
	21 hitting the bar goal from shooting	1 s	.7333
	22 missing the goal from shooting	2 s	1.0000
General	23 handling the ball	3 s	.7333

\* indicates rejection that value CVR less than 0.49.

The result of the content validity ratio by expert, are presented in table 1 (penalty statements) and table 2 (instructions test statement). The CVR is an item

statistic that is useful in the rejection or retention of specific items. Minimal value of CVR with fifteen experts is .49 (Lawshe, 1975), There are two statements have less than .49, number 33 in instructions test statement (table 1) and number 19 in penalty statement (table 2). Both of this statement about player can't shoot with inside foot, so the instructional this test, especially on shooting content, should revision. Finally, player shoots must on goal for three times or seven changes maximum with all part of foots, twice for dominant foot and once for the other foot. After items have been identified for inclusion in the final form, the *content validity index* (CVI) is computed for the whole test.

**Table 2. CVR for Instructions Items**

Content Test	Instructions test statement	CVR	
Passing & Receiving (1 target, 1 area)	1 used both of foots	.8667	
	2 inside foot only	1.0000	
	3 passing target area are 0.2 m width and 0.4 m high	1.0000	
	4 penalty target 0.2 m width on right and left.	1.0000	
	5 passing and receiving area is 1 x 1 m.	.8667	
	6 distance passing target is 2 m.	.6000	
	7 passing without controlling.	1.0000	
	8 6 repetitions	1.0000	
Dribbling (straight)	9 with sole of shoes.	.6000	
	10 dribbling track 5 meters	.7333	
	11 contact the ball 5 times or more.	.8667	
Passing & Receiving (2 target, 1 area)	12 used both of foots	1.0000	
	13 inside foot only	.8667	
	14 passing target area are 0.2 m width and 0.4 m high	1.0000	
	15 penalty target 0.2 m width on right and left sides.	1.0000	
	16 passing and receiving area is 1 x 1 m.	1.0000	
	17 distance passing target is 2 m.	.8667	
	18 passing without controlling.	.6000	
	19 6 repetitions	1.0000	
	Dribbling (zig-zag)	20 both of foot freely	1.0000
21 used all of part of the foot		.8667	
22 3 pieces dribbling obstacles		.6000	
23 0.6 m obstacle width.		.6000	
24 distance between each obstacle is 1 m.		.8667	
Passing & Receiving (1 target, 2 areas)	25 used both of foots	1.0000	
	26 with inside foot	.8667	
	27 passing target area are 0.2 m width and 0.4 m high	1.0000	
	28 penalty target 0.2 m width on right and left.	1.0000	
	29 passing and receiving area is 1 x 1 m.	1.0000	
	30 distance passing target is 2 m.	.7333	
	31 passing without controlling.	.6000	
	32 6 repetitions	.8667	
	Shooting	33 no inside foot	*.2000
		34 3 times on goals.	1.0000
35 twice with dominant foot and 1 time with the others		1.0000	
36 7 time changes given		1.0000	
37 shooting area 1 x 1 m.		1.0000	
38 shooting distance 7 m.		1.0000	
39 the ball not stationary		1.0000	

\* indicates rejection that value CVR less than 0.49.

The content validity FST was .8644. The time taken (speed) and the penalty time (accuracy) variables were .8912 and .8182. If test is viewed from a part of the contents of test, passing & receiving, dribbling, and shooting, the validity are presented in table 3. The content validity (.9056, .7667, and 1.000) to passing & receiving, dribbling, and passing contents from time taken variable. The content validity (.8000, .8400, .8667, .7333) to passing & receiving, dribbling, passing, and general from penalty time variable. The content validity from overall FST (.8704, .7949, .9467, and .7333) to passing & receiving, dribbling, shooting, and general contents. All the content validity were accepted (>.70).

**Table 3. CVI (total statement) for Futsal Skill Test**

Items	Time taken	Penalty time	Performance time
Passing & receiving 1	(8) .9167 *	(4) .8667 *	(12) .9000 *
Dribbling straight	(3) .7333 *	(2) .8667 *	(5) .7867 *
Passing & receiving 2	(8) .9167 *	(4) .7333 *	(12) .8556 *
Dribbling zig zag	(5) .7867 *	(3) .8222 *	(8) .8000 *
Passing & receiving 3	(8) .8833 *	(4) .8000 *	(12) .8556 *
Shooting	(6) 1.0000 *	(4) .8667 *	(10) .9467 *
General		(1) .7333 *	(1) .7333 *
Passing	(24) .9056 *	(12) .8000 *	(36) .8704 *
Dribbling	(8) .7667 *	(5) .8400 *	(13) .7949 *
Shooting	(6) 1.0000 *	(4) .8667 *	(10) .9467 *
General		(1) .7333 *	(1) .7333 *
Futsal skills	(38) .8912 *	(22) .8182 *	(60) .8644 *

\* indicates validity accepted.

## DISCUSSION

Validity refers to degree to which a test actually measures what it claims to measure (Miller, 2002). The valid futsal test should measure futsal skill. The FST have validity by content validity could use to assess futsal skill. Content-related validity is evidence of truthfulness based on logical decision making and interpretation (Morrow, et al, 2005). Contents of the FST, passing, receiving, dribbling and shooting, are part of the skill that is always displayed the players during games or competitions. Thus, by the logic can be interpreted that futsal skills test must be comprised of passing, receiving, dribbling, and shooting skills. Content validity depends on professional judgment using logic and comparison (Lacy, 2011). Not just anyone can judge that logics, the person must be a person who is an expert or a professional in the field. Expert as subject in this study are futsal coach and lecturer who has skills futsal or soccer. To be a “good” test, a test ought to have adequate evidence for its validity, reliability, and accuracy for the purpose it is being used for, and for the persons it is being used with (Kubiszyn and Borich, 2010). Finally, the FST is a good test, because it has a content validity.

Test items should be representative of the actual game skill (Kirkendal, 1987) (Strand and Wilson, 1993). The shooting item a little change, namely the provision contact to the ball of the foot. The experts have the opinion that the shooting did not have to use the instep foot, but player can use all parts of the foot, so that when the shooting is not restricted. Ideally in the game of futsal can do the shooting with the entire foot with a goal scores. Thus a series of skill in the FST has been approached with skills in actual games, so this test can measure the level of skill to play futsal. This test contains a series of skills of pass, receive and dribble the ball are varied and ends with shooting the ball. The series is a series of skill exhibited in the actual game.

This test records two important variables, namely speed and accuracy in futsal skills. The difference of these variables have the opposite side, so the player must be able to perform a series of futsal skills quickly and accurately, not quickly but a lot of mistakes or otherwise accurately but do it slowly. The steps in learning skill were; understanding, practice and performance (Schempp, 2003). At performance's stage, the skill is executed in a match or activity. When executing the skill, players should focus on the purpose of the activity and not the process. When a skill is being performed conscious thought is replaced by automaticity. More mastery players are more automaticity, making it quicker and more accurate to adapt the situation. The results of this study suggest that the more skilful players were able to do this, thus highlighting the validity of the FST.

The value of validity has its own interpretation. The validity of test can be established using either qualitative or quantitative approach (Lacy and Hastad, 2007), the qualitative approach depends upon the use of common sense and professional judgment in making subjective judgments about the test in question while the quantitative approach is a data based approach that involves calculating correlation coefficient to determine the validity. The FST has value of validity that established by expert judgment. The experts are lectures and futsal coaches who making judgment about the test. The validity of FST has established using qualitative approach. Furthermore, the validity of test needs to be studied using quantitative approach, especially criterion-related validity.

Finally, the FST have been shown to be valid methods of assessing futsal skill performance. This test can be used as an instrument in research. The value validity of test is used content validity methods. That is needed further research using other methods of estimation validity, especially with quantitative approach to establish the value validity.

## CONCLUSION AND SUGGESTION

The FST was developed to measure futsal skill for general players. This test can be used for research purposes and the selection of players. Furthermore, need to be assessed on the validity of this test with different methods of quantitative approach. Evidence criterion-related validity was completing the content validity of the FST.

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