

Development of Authentic Assessment Model of Learning Outcomes in Field Tennis Courses

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Abstract—to assess the practicum lecturing process, especially field tennis course, an accurate, reliable, objective, and relevant with the field tennis characteristics assessment instrument for student is required. The purpose of this research is to develop the authentic assessment model (performance-based assessment) of learning outcome of Tennis Course students. This research used research and development method by four development stages. The data collection was uses test and measurement technique. The testing of content validity is analyzed by using CVR (Content Validity Ratio). The reliability coefficient was performed by using the Genova program package based on the Generalizability theory developed by Cric and L. Brennan. Meanwhile, to investigate the reliability between raters (inter-tester reliability) was by using Anava-General Multifaceted Model. The research result indicates Authentic Assessment Model consisting of; (1) factors, indicators, and rubric of field tennis assessment (descriptor) which can be used as observation instruction by tennis expert to assess the performance of tennis player when competing, (2) instruction and form of tennis assessment observation sheets of the four factors and indicators of tennis, and (3) scoring sheet for final assessment of playing tennis skills with good level of validity and reliability. It is expected that the assessment conducted by tennis course lecturers can be done objectively, have validity and reliability in accordance with the real student learning outcomes significantly.

Keywords—field tennis, authentic assessment, student

I. INTRODUCTION

Improvement of the quality of the teaching and learning process is an important problem in physical education, sport, and health at all levels of education units ranging from the elementary level to the higher education level. Every teaching and learning process or course in any subject requires an assessment or assessment process. The teaching and learning process will not know the results for sure when there is no assessment. Evaluation or assessment is an integral part of a teaching and learning process in higher education. Evaluation serves as a way to monitor the development of student learning and to find out how far the learning objectives contained in the RKBM can be achieved. Therefore, in an effort to improve the quality of learning outcomes, students

must have synergy among: learning materials, learning strategies, and assessment instruments applied.

Field tennis is one of the courses taught in all study programs in Faculty of Sport Sciences Universitas Negeri Yogyakarta (FIK UNY). At the end of each lecture, the practice of field tennis course, the lecturer always conducts assessments to access the level of achievement of student learning outcomes. The current condition of FIK UNY has several problems faced by the lecturers of field tennis course, including: (a) assessment conducted by the lecturer on the student learning outcomes of tennis in FIK UNY using old assessment of sports skills tests from abroad experts few decades ago. The designed sports skill test is only limited to measuring the level of mastery of the basic playing techniques and has not significantly measured the performance of students in accordance with the actual situation of playing tennis.

Given the importance of the assessment / assessment model that can access student learning outcomes authentically from the cognitive, affective, and psychomotor aspects, the field tennis lecturers should not only be fixated on psychomotor assessment model (conventional assessment through sports skills / sports skills tests) which has been frequently used and familiar among lecturers. While this conventional valuation model is still maintained, there is concern that this assessment is not sufficient information to keep up with the rapid changes in education in higher education that emphasize real / authentic learning outcomes from higher cognitive, affective, and psychomotor aspects in the form of integrated learning. Field tennis lecturers must have the courage to develop an assessment model for student learning outcomes, one of which is performance assessment (authentic assessment). Based on the background of the problem and needs analysis as described above, this is what inspired the researchers to have the idea of doing the research as solution to solving the problems. as answer to these problems the authors drafted to develop an assessment model for "authentic assessment" learning outcomes of field tennis courses for FIK UNY students.

II. LITERATURE REVIEW

A. Assessment

Assessment is the process of collecting data systematically to make decisions about students. Data obtained by using tests and non-test that are then processed into information about students. So the assessment process includes collecting evidence about the learning outcomes of students. Assessment of student learning outcomes in the physical education subject family is carried out through observing changes in attitude and behavior to assess students' knowledge, psychomotor, and affective development. Assessment conducted by the teacher includes all learning outcomes of students consisting of: cognitive, psychomotor, and affective abilities, but the emphasis of each domain is not the same so that the characteristics of the subjects to be considered [5] must be considered.

According to [15], assessment is the process of gathering information. Assessment serves to help students to learn. Data collected through assessment can be directly used as feedback for improving learning improvement. Through assessment, there will be valid information to make the right decision. On the basis of the expert opinion can be drawn the meaning that the role of the assessment of the performance results of students is so strategic, therefore the evaluation process in the learning process should be done every day with systematic and well planned schedule. This can be done by a physical education teacher by placing an integral evaluation in the planning and implementation of the learning material learning unit. Another important part that needs to be considered for a physical education teacher is the need to involve students in evaluation so that they can consciously recognize the development of their learning outcomes.

B. Criteria of Assessment Instrument

Assessment instrument plays a very important role in determining the quality of student learning outcomes. This is due to the accuracy of the data obtained will be largely determined by the validity of the assessment instrument used. The selection and preparation of tests in physical education, sport, and health is an important step in the assessment process. The quality of information obtained depends on the quality of the assessment instrument to be used. Therefore, it is necessary to understand what criteria can be used to choose the tests that are already available or to develop new tests for the benefit of physical education, sport, and health teaching. The assessment instrument is said to be good if it meets several criteria: (1) relevant in data collection in accordance with the objectives of the assessment, (2) there is balance of multidimensional measurement proportions, (3) can be used efficiently, (4) there is objectivity in the assessment of honesty, (5) showing consistency of measurement, (6) describing honesty of assessment (not biased), (7) specifically measuring studied aspects, (8) describing the level of difficulty shown by the skills, knowledge, and abilities of individuals assessed, (9) it can distinguish level of individual ability, (10) does not measure speed [12].

Sports and health physical education experts have created various assessment instruments that can be used to measure the extent to which physical education, sport, and health goals have been achieved. In order for the assessment process to be good, all assessment instruments used to collect data about students' abilities must have criteria or characteristics of good

test. In relation to the preparation of the physical education test, [1] emphasizes that "tests in physical education, sport, and health that are prepared must meet the following requirements: (a) measure important abilities, (b) resemble the real game, (c) must encourage the test to do in good style, (d) must be done by only one person, must be interesting, must be difficult enough, (e) must be equipped with careful scoring method, (f) must have sufficient number of experiments, (g) must be considered with statistical evidence (valid, realistic, and objective), and (h) must be able to distinguish the level of ability tested ". According to [13], the criteria include validity, reliability, objectivity, economics, suitability of age and gender, value of education, having norms, and having instructions for implementing tests.

From various opinions as stated above, it can be drawn that researchers are going to compile and develop assessment instruments in the teaching of physical education, sports and health; they must know the very essential technical elements of the field or branch of the sport that will be prepared by the test. The other side that needs to be considered knows some rules in the preparation of tests so that the tests that are prepared can meet the criteria of valid, reliable, objective test, and can be applied in the education process.

C. Authentic assessment

Authentic assessment / performance-based assessment is an assessment model in physical education that has recently been developed to respond to the implementation of the physical education, sport, and health curriculum both KTSP curriculum and Curriculum 2013. Authentic assessment is model of assessment of student/ student performance designed to occur in real life and can be directly observed, not imitation as conventional form assessment system (paper based test). Authentic assessment is multidimensional or comprehensive which requires students to integrate high-level thinking into the behavior of these students [3]. As an illustration of this authentic assessment are: in playing tennis, students can not only do service, forehand, backhand or volleyball, but more than that, students are also required to be able to understand the rules of the game and be able to apply these techniques in the design of tactics and strategy for playing tennis developed during the play.

Authentic assessment is a learning assessment that refers to the context of the "real world" which requires a variety of approaches to solving problems that provide the possibility that a problem can have more than one way of solving. In other words, authentic assessment monitors and measures students' abilities in various possible solutions to problems faced in the real world context [7]. Whereas according to [4], authentic assessment is an assessment designed so that students are able to carry out meaningful tasks and can present real performance, emphasizing high-level thinking, more complex learning, and involving the examination of processes and learning products.

From preceding opinions, it can be concluded that authentic assessment is an assessment that measures, monitors, and assesses all aspects of student learning outcomes holistically (covering cognitive, psychomotor, and affective domains) both that appear as the end result of a learning process and in the form of change and development activities during the learning process in class and in the field.

D. Field Tennis

Tennis is sport game that is categorized into open motor skills. According to [16], in the tennis game, the arrival of the ball is very difficult to predict before since its arrival is influenced by five aspects, namely: (a) high- low, (b) far distance, (c) direction, (d) speed , and (e) type of ball spin. These five aspects greatly affect the position of the ball to be hit. In addition, weather, wind, and the sun are external factors that can interfere with playing concentration. Because field tennis is an open type of skill, the teaching system must also be in the form of open training.

The four phases of the open skill process consist of: (1) Perception, (2) Decision, (3) Execution, and (4) Feedback. **Perception** is the ability to identify, understand the characteristics of the ball that comes through the speed of reaction or anticipation. Decision is the ability to make decisions as quickly as possible before the execution of the hit Execution is the phase of the ball being hit (the execution phase of the hit). Feedback is feedback on the outcome of the hit. This feedback can come from the player himself or from the teacher or trainer.

In the implementation of the four steps of the open skill process, it can be developed by each player, but every step of the open skill process each player is required to have an adequate level of mastery of tennis playing skills so that each implementation can be done automatically. To be able to react quickly or to anticipate sufficient playing experience is needed and must be provided by the level of sense acuity. Anticipation in the game of tennis court according to [2] consists of 4 types, namely: perceptual anticipation, geometrical anticipation, technical anticipation, and tactical anticipation.

Decision is the ability to make decisions as quickly as possible before the execution of a hit about what should be done. Decision can be done by considering five situations in a tennis game with 7 variables in it (the seven tactical variables). The 5 games situation in the tennis game according to [18], consists of: (a) where a player serves, (b) where a player returns a service, (c) if a player and the opponent rally on the backcourt, (d) if someone approaches the net, and (e) if the opponent actually approaches the net. While 7 variables (the seven tactical variables) contained in the field tennis game according to [2], consists of: (a) player characteristics, (b) environment, (c) playing area, (d) playing phases, (e) playing style, f) characteristics of the ball received and (g) characteristics of the ball sent / given.

Execution is the execution phase of the hit. To be able to perform the execution, a player is required to have the provision of the basic techniques of playing good tennis, having a sufficient ball control, so that every move and execution of the hit can be carried out comfortably and effectively. According to [2], a player who has mastery of good techniques, has several advantages, including: (a) having comfort when hitting (conformity). With the convenience and mastery of effective techniques, it will avoid effortless effort, minimizing the likelihood of injury, is a strong basis needed for further technical development, (b) having the ability to perform various tasks in a consistent or consistent manner.

Feedback is review on the outcome of the hit. A proper evaluation through this feedback, a player will know and be

aware of the hits made to the opponent's abilities and as a medium to make corrections to the performance performed by the player himself (introspection). Feedback is divided into three types, namely visual, auditive, and kinaesthetic.

III. RESEARCH METHOD

The research procedure used in the research development of the authentic assessment of assessment model of the field tennis course learning outcomes for FIK UNY students was adopted from the development research model from Sugiyono, with the research steps as stated in the scheme below:

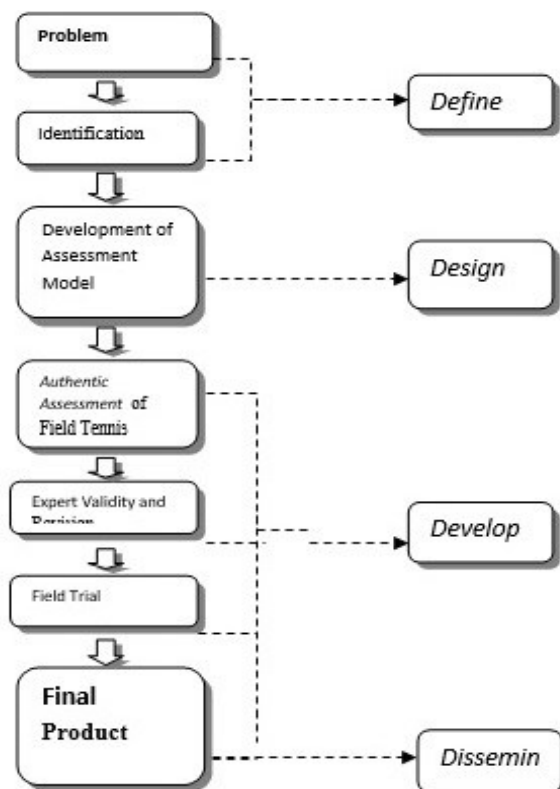


Fig. 1. Scheme of Research Steps

IV. RESEARCH SUBJECT

Subjects to develop an Authentic Assessment Model of Field Tennis Course Learning Outcomes of Students of FIK UNY employed in this research were students from of the Physical Education, Sport, and Health (PJKR), Sport Coaching Education (PKO), Sport Science (IKORA), and Physical Education for Elementary School (PGSD) Study Programs of FIK Universitas Negeri Yogyakarta who had taken the Field Tennis Course registered and were active in UNY Tennis Student Activity Unit (UKM).

V. TECHNIQUE AND DATA COLLECTION INSTRUMENT

Data collection in this research used test and measurement technique. The measurement of student learning outcomes in playing tennis was done by conducting competition in the half competition with the "Pro Set Tie Break" system which was assessed by 5 tennis experts through subjective rating expert judgment. Measurement on the results of learning to play

tennis in the field was held at FIK UNY Tennis Court, Colombo Street No. 1 Yogyakarta.

Research data collection instrument was done by using half competition matches with "tie break" system that was assessed / observed by 5 field tennis experts / experts through subjective rating expert judgment. In conducting assessments during the half competition match, the raters used assessment sheet containing factors and indicators of field tennis learning outcomes that had been developed by researchers who had passed through expert validation phases.

VI. DATA ANALYSIS

To test the content validity of the Development of an Authentic Assessment Model of Learning Outcomes of Field Tennis Course of Students of FIK UNY was conducted through the assessment of field tennis experts (subjective rating expert judgment) and analyzed by using the CVR (Content Validity Ratio). Determination of the reliability coefficient of the Development of Authentic Assessment of Learning Outcomes of Field Tennis Course for Students of FIK UNY was conducted by using Genova program package based on the Generalizability theory developed by Cric and L. Brennan. To find out the inter-rater reliability was by using Anava-General Multifacet Model.

VII. RESEARCH RESULT AND DISCUSSION

A. Research Result

Based on literature review, analysis of needs (through preliminary studies), and relevant research, an initial draft of the authentic assessment was compiled from the results of field tennis courses for FIK UNY students which contained: (1) identifying aspects of the performance process of playing tennis will be assessed, (2) compile a grid of basic tennis techniques based on indicators, (3) assessment and observation guidelines, (4) compile assignment sheets and test implementation instructions, observation sheets, and their scoring systems.

The draft of the assessment instrument for authentic assessment that has been compiled is then validated to 5 experts / experts who have been appointed to get input and suggestions from experts. Result of Assessment of the Experts as follows:

TABLE I. FACTOR AND INDICATOR OF FIELD TENNIS GAME

Sport	Factor	Indicator
Field Tennis	Mental of Playing (Psychology)	Decision making will carry out every hit (confident and not hesitant). The playing strategy that is applied appropriately
	Process of Doing the Hitting (perception & decision)	The process of implementing the hit technique (skill in executing) is efficient from the process of ready position, balance, backswing, point of contact, control, and follow through.
	Result of Hitting Process (execution and feedback)	The execution result that is carried out is effective (obtaining a score or complicating the return of the opponent. Court Movement (movement to cover the field) is good.
	Attitude and Behaviour of Tennis Player	After hitting the ball back to the starting position (center mark) and always showing a high fighting spirit. Showing fair play / sportsmanship when playing.

TABLE II. RESULT OF ASSESSMENT OF THE EXPERTS

Expert	Score	Information
1	4	Good
2	3	Good
3	4	Good
4	3	Good
5	4	Good

The results of the validation conducted by experts show that 5 experts gave good scores on the draft assessment model authentic assessment of the learning outcomes of the developed Field Tennis Course. The results of the content validity obtained by using the CVR = 1.00 formula, so that the results of the assessment conducted by experts can be said that the Assessment Model Instrument of Authentic Assessment of Field Tennis Court learning outcomes can proceed to the next stage after being revised according to suggestions and input from experts.

After going through the development stages along with the steps of in-depth development research, factors, indicators, and descriptors for the assessment of the learning outcomes of the Field Tennis Court have been successfully used to assess tennis performance when playing / playing tennis. The assessment rubric of learning outcomes of the Field Tennis Court that had been developed was used as an expert guide to assess students' abilities / skills when playing tennis. The assessment of authentic assessment rubric that has been produced consists of: (1) observation guidelines consisting of: factors, indicators, and rubric (descriptor) learning outcomes of the Field Tennis Course that can be used as a guide to observation / observation to assess student learning outcomes when playing / competing, (2) the task of playing tennis (half competition match), (3) instructions and guidelines for filling out observation sheets for authentic assessment of learning outcomes of the Field Tennis Court, and (4) scoring sheets for final assessment of the Tennis Court learning outcomes Field.

1. Instructions and Guidelines for Filling Observation Sheet for Learning Results of Tennis Court.

TABLE III. FILLING INSTRUCTIONS AND OBSERVATION SHEET (MENTAL COMPETING FACTOR / PSYCHOLOGY)

Sign or Score	Description
" + " (plus) and Score 3	If decision making during tennis always appears , decision making is right between 90-100%.
" v " (check) and score 2	If decision making during tennis appears quite frequent , decision making is right between 66% - 89%.
" - " (minus) and score 1	If decision making during tennis appears a little , decision making is right between 0 - 65%.

TABLE IV. FILLING INSTRUCTIONS AND FACTOR OBSERVATION SHEETS FOR THE IMPLEMENTATION OF HITTING TECHNIQUES (PERCEPTION AND DECISION)

Sign or Score	Description
“ + “ (plus) and Score 3	If the process of implementing the hit technique (execution skills) always appears and is performed efficiently between 90-100% starting from the process of ready position, balance, backswing, point of contact, control, and follow through.
“ v “ (check) and score 2	If the execution process of the hit technique (execution skills) appears quite frequent and is carried out efficiently between 66% - 89% starting from the process of ready position, balance backswing, point of contact, control, and follow through.
“ – “ (minus) and score 1	If the process of implementing the hit technique (execution skills) appears a little and is done efficiently between 0 - 65% starting from the process of ready position, balance, backswing, point of contact, control, and follow through.

TABLE V. FILLING INSTRUCTIONS AND OBSERVATION SHEETS OF RESULT FACTORS FOR HITTING TECHNIQUE IMPLEMENTATION (EXECUTION AND FEEDBACK)

Sign or Score	Description
“ + “ (plus) and Score 3	If the results of the execution are effective (getting a score or making it difficult to return the opponent always appears between 90% - 100%.
“ v “ (check) and score 2	If the results of the hitting (execution) are effective (get a score or make it difficult to return the opponent appears quite frequent between 66% - 89%.
“ – “ (minus) and score 1	If the results of the hitting (execution) are effective (get a score or complicate the return the opponent appears a little between 0 - 65%.

TABLE VI. FILLING INSTRUCTIONS AND ATTITUDE FACTORS AND BEHAVIOR OBSERVATION SHEETS

Sign or Score	Description
“ + “ (plus) and Score 3	If after hitting the ball back to the starting position (center mark), always showing high and being fair play / sportsmanship when playing always appears between 90% - 100%.
“ v “ (check) and score 2	If after hitting the ball back to the starting position (center mark), always showing a high fighting spirit, and being fair play / sportive when playing appears quite frequent between 66% - 89%.
“ – “ (minus) and score 1	If after hitting the ball back to the starting position (center mark), always showing high fighting spirit, and being fair play / sportive when playing appears a little between 0 - 65%.

2. Criteria for Assessment of Skill Level in Learning Outcomes of Field Tennis Course

In addition to obtaining guidelines for filling and observing/ observing sheets to assess the learning outcomes of performance-based student tennis skills (authentic assessment), the scoring sheet has also been developed to assess the learning outcomes of the Tennis Court Course. For this purpose, researchers use the following criteria:

TABLE VII. FINAL ASSESSMENT CRITERIA FOR THE RESULTS OF TENNIS SKILLS LEARNING OUTCOME

Average Score Interval	Category
2,25 < score ≤ 3.00	Good
1,50 < score ≤ 2,25	Medium
1,00 < score ≤ 1,50	Less

3. Observation Sheet of Development of Assessment Model of Authentic Assessment for Learning Outcome of Field Tennis Course

TABLE VIII. OBSERVATION SHEET OF DEVELOPMENT OF ASSESSMENT MODEL OF AUTHENTIC ASSESSMENT FOR LEARNING OUTCOME OF FIELD TENNIS COURSE

No.	Factors					Category
	Competing Factor (Psychology)	Process of Hitting Implementation (perception and decision)	Result of Hitting Implementation (execution and feedback)	Attitude and Behaviour of Tennis Player (fair play/sportive)	Total Score	
1.	3	3	3	3	3	Good
2.	2	3	3	3	2,75	Good
3.	3	3	2	2	2,50	Good
4.	2	3	2	3	2,50	Good
5.	2	2	2	3	2,25	Medium
6.	2	3	3	3	2,75	Good
7.	2	3	2	2	2,25	Medium
8.	2	2	2	2	2.00	Medium
9.	2	3	2	3	2,50	Good
10.	2	2	2	3	2,25	Medium

4. Result of Content Validity

Result Data from 5 expert assessments of factors and indicators for the development of assessment model of authentic assessment by selecting 3 answer choices consisting of: **important, appropriate not important, and useless**. The results of expert validation of factors and indicators can be seen in table 9.

TABLE IX. DATA FROM THE ASSESSMENT OF EXPERT LECTURERS

Rater/ Assessor	Factor Assessment			
	Competing Mental (Psychology) (1)	Perception and Decision	Execution And Feedback	Fair Play/Sportive
BPA	Important	Important	Important	Important
AAL	Important	Important	Important	Important
SDNYT	Appropriate not Important	Important	Important	Important
NGT	Important	Important	Important	Important
YDT	Important	Important	Important	Appropriate not Important

Based on the recapitulation of expert assessment results in table 9 above, it can be concluded that out of 5 expert assessors, factor 1 (mental competing / psychology) states that factor 4 expert assessors state that it is important to play tennis and 1 expert assessor states that it is not important. Factor 2 (the process of hitting) of 5 expert assessors, 5 expert assessors state that perception ability and decision making

process (decision) is important. Factor 3 (the results of the execution of the hit / execution and feedback) of the 5 expert assessors turned out that 5 assessors state that these factors are important. While the factor 4 (fair play / sportive attitude and behavior) of 5 expert assessors, 4 assessors state it is important and 1 assessor states it is not important.

The Results of CVR Calculation Validity of the Contents of the Development of Tennis Skills Test Based on Tactical Approach can be concluded that competing mental factors (psychology), the process of execution of hitting (perception and decision), the results of execution of hit (execution and feedback), and the attitude and behavior of players (fair play / sports) when playing tennis have very good content validity coefficient. This is because the CVR coefficient value of all factors and indicators for the development of an authentic assessment model assesses the Field Tennis Court Learning Outcomes is above 0.50. Thus, these factors can be used as an assessment model for authentic assessment of learning outcomes of the Field Tennis Court for FIK UNY students. This is in accordance with the opinion of [3], who say that the level of accuracy (validity) of an assessment instrument is concerned, if it is able to measure what should be measured.

5. *Reliability Test of Assessment Model Development of Authentic Assessment of Learning Outcomes of Field Tennis Course for FIK UNY Students*

Based on the trial data development of Assessment Model of the Authentic Assessment on the mental Based on the trial data for the development of Assessment Model of Authentic Assessment on competing mental factors (psychology), it is figured out that the reliability value if estimated by using Consistency Cronbach Alpha shows high reliability coefficient value ($r = 0.901$). Analysis using Anava-General Multifacet Model value of the interclass correlation coefficient shows high reliability ratio among raters ($r = 0.905$).

Based on the trial data development of Assessment Model of the Authentic Assessment on the Process of Hitting (perception and decision) factor, it is known that the reliability value if estimated using Consistency Cronbach's Alpha shows high reliability coefficient value ($r = 0.924$). Analysis using Anava-General Multifacet model value of the interclass correlation coefficient shows high reliability coefficient among raters ($r = 0.892$).

Based on the trial data development of Assessment Model of the Authentic Assessment on the Result of Hitting (execution and feedback) factor, it is found that the reliability value if estimated using Consistency Cronbach's alpha shows high reliability coefficient ($r = 0.916$). While the analysis using Anava-General Multifaceted Model value of the interclass correlation coefficient shows high reliability coefficient among raters ($r = 0.898$).

Based on the trial data development of Assessment Model of the Authentic Assessment on the Attitude and Behavior of Tennis Player (fair play/ sportive) factor, it is found that the reliability value if estimated using consistency Cronbach alpha show high reliability coefficient ($r = 0.907$). Analysis using Anava-General Multifaceted Model of the

value of the interclass correlation coefficient show high reliability coefficient among raters ($r = 0.881$).

The following is presented in table 11 on the trial reliability coefficient of each factor of development of Assessment Model of Authentic Assessment of the Learning Outcome of Field Tennis Course for FIK UNY Students as follows.

TABLE X. RELIABILITY COEFFICIENTS FACTORS FOR DEVELOPING ASSESSMENT MODEL OF AUTHENTIC ASSESSMENT OF LEARNING OUTCOMES OF FIELD TENNIS COURSE

Factor	Consistency Alpha Cronbach	Anava-General Multifacet Model	Status
Competing Mental (Psychology)	0.901	0.905	Reliable
Process of Hitting (Perception and Decision)	0.924	0.892	Reliable
Result of Hitting (Execution and Feedback)	0.916	0.898	Reliable
Attitude and Behavior of Tennis Player (Fair Play/Sportive)	0.907	0.881	Reliable

Based on table 11 above, it can be concluded that mental factors of competition (psychology), execution process (perception and decision), results of execution of the hit (execution and feedback), and tennis player attitudes and behavior (sportsmanship / fairplay) are known to have inter reliability coefficients. Rates are high so that the four factors are very fundamental factors to be developed as Assessment Model of Authentic Assessment of the Learning Results of Field Tennis Course. This is in line with the opinion of [17], stating that an assessment instrument is said to meet the requirements as a good evaluation tool if the test means "how much degree the instrument consistently measures the measured target".

B. *Discussion*

Based on the results of the analysis of research data, they indicate that the development of assessment model of authentic assessment of the learning outcomes of field tennis courses for FIK UNY students is obtained the results of high test reliability coefficient through Alpha Cronbach Consistency analysis ($r = 0.901 - 0.924$) and Anava-General Multifacet Model ($r = 0.881 - 0.905$). This indicates that the development of the authentic assessment model can be used as an assessment instrument model that can be used to assess the learning outcomes of the field tennis course for FIK UNY students because it has high level of consistency / constancy between lecturers. From the five raters agree that the mental factors of playing/ competing, the process of execution of the hit, the results of the execution of thehit, and the attitudes and behavior of tennis players are fundamental factors that are very necessary to access the learning outcomes of Tennis Court Course for FIK UNY students. If an assessment instrument used to assess the skills of a sport branch has a reliability coefficient ≥ 0.80 , the test is very good to be used as an instrument to measure sports skills including field tennis [13].

Through the content validation test of several tennis experts, the development of an authentic assessment model of Field Tennis Course learning outcomes for FIK UNY

students resulted in 4 main factors (mental competing (psychology), execution process (perception and decision), results of execution of hits (execution and feedback), and the tennis player's attitude and behavior (sportsmanship / fairplay) during the half competition can be used as an instrument to assess the learning outcomes of the Field Tennis Course learning outcomes for FIK UNY students; all factors and development indicators of authentic models assess learning outcomes of Field Tennis Court above 0.50. This is in accordance with the opinion of [3] who claim that the level of validity of an assessment instrument is capable of measure what should be measured, thus these factors can be used as an assessment model for authentic assessment of the learning outcomes of the Field Tennis Course for FIK UNY Students.

In playing tennis, to win the game or match is not merely determined by the level of mastery of the hit technique. However, there are several variables that are very influential on the game of tennis, including: psychological / mental competing factors, the ability to read the direction of the arrival of the ball before making a decision (decision) to hit the ball, accuracy of hitting the ball (execution), and enthusiasm fighting (fighting spirit). These factors according to [2] are very necessary in tennis planning because the direction, speed, rotation, height, and depth of the ball of the opponent when playing or playing field tennis is difficult to predict beforehand. Thus the ability is needed to justify the direction of the ball's arrival accurately before making a hit. To be able to justify the direction of the arrival of the ball with the right, it is necessary to hone the reception skill and projection skills so that the hit done has a good level of accuracy when playing tennis.

The results of learning the skills of playing tennis through the half competition system will be observed carefully how to compete (psychological factors), the decision making process, the accuracy of hitting the ball, and the spirit of competing in upholding the fair play of a tennis player in implementing all four factors. When playing. Through this match, tennis players will feel the situation of playing actual tennis which will always be found when they play and compete (the real game of tennis). Reliability testing to develop an authentic assessment model among raters based on the data analysis was obtained, which resulted in the development of an authentic assessment model consisting of: competing mental factors (perception), perception and decision, execution and feedback, and tennis player's attitudes and behavior (sportsmanship and fair play) are known to have high reliability among the rater coefficients so that it is a very fundamental factor to develop as an assessment model for authentic assessment of learning outcomes of the Field Tennis Course for FIK UNY Students. This test is intended to ensure that the assessment instruments used are instruments that consistency in the scores given by the assessor one with other assessors, so that if used repeatedly can produce the same data. This is in line with the opinion of [17] who said that a test is said to meet the requirements as a test / instrument of good judgment if the test means "how much the test degree measures consistently the measured goal". In other words, the development of an authentic assessment model of the learning

outcomes of the Field Tennis Course has good degree of measurement reliability.

VIII. CONCLUSION

Development of assessment model of authentic assessment of Field Tennis Course learning outcomes has high reliability coefficient among raters. Thus, the assessment model has good degree of assessment so that it can be used as an instrument to assess the learning outcomes of the Field Tennis Course for FIK UNY students. The mental factors of competing (psychology), the process of execution (perception and decision), the results of execution of the hits (execution and feedback), and attitudes and behavior (sportsmanship and fair play) are very fundamental factors in developing the assessment model of authentic assessment of Field Tennis Course learning outcomes for FIK UNY students. Development of assessment model for authentic assessment of the Field Tennis Course learning outcomes for FIK UNY students whose factors consist of: mental competing, execution process (perception and decision), execution and feedback results, and tennis player attitudes and behavior (sportsmanship and fair play) has high coefficient of content validity. Therefore this assessment model has good degree of accuracy in assessing the learning outcomes of the Field Tennis Course learning outcomes for FIK UNY.

REFERENCE

- [1] A. Abdoellah, "Evaluasi Hasil Belajar Dalam Pendidikan Olahraga". Yogyakarta: IKIP Yogyakarta. (1985).
- [2] L. Cayer, "Mini Tennis/Novice Tennis Instructor". Canada: National Coaching Certification System, 1988.
- [3] A. C. Lacy, "Measurement & Evaluation in Physical Education and Exercise Science (Sixth Edition)". San Fransisco, CA: Pearson Benjamin Cummings Publishing, 2011.
- [4] J. L. Lund, M. F. Kirk, "Performance Based Assessment for Middle and High School Physical Education". USA: Human Kinetics Publishers, 2010.
- [5] D. Mardapi, "Pengukuran, Penilaian, dan Evaluasi Pendidikan". Yogyakarta: Parama Publishing, 2016.
- [6] D. K. Miller, "Measurement by The Physical Educator (Why and How)". New York: The Mc. Graw-Hill Companies, Inc., 2002.
- [7] Morrow, James R. (2005). Measurement and Evaluation in Human Performance (Second Edition). United States of America: Champaign, Human Kinetics.
- [8] Mueller, John. (2009). Authentic Assessment Toolbox. Nort Central College. <http://jonathan.mueller.faculty.nctrl.edu/toolbox/index.htm> (Diambil 27 Agustus 2009)
- [9] E. Mulyatiningsih, "Metode Penelitian Terapan Bidang Pendidikan". Bandung: Alfabeta, 2012.
- [10] Ngatman, "Action Methods Dalam Tenis Lapangan (Tabloit Tennis)". Jakarta: Pengurus Besar (PB) PELTI, 2001.
- [11] Ngatman, "Validitas, Reliabilitas, dan Obyektivitas Instrumen Penilaian dalam Pendidikan Jasmani", Majalah Ilmiah Olahraga, 2002, vol. 3.
- [12] G. V. Payne, L. D. Isaac, "Human Motor Development A Lifespan Approach". New York: Mc.Graw.Hill Companies.Inc.. 2003.
- [13] B. N. Strand, R. Wilson, "Assesing Sport Skills". United State of America: Human Kinetics Publishers, 1993.
- [14] Sugiyono, "Metode Penelitian Kuantitatif Kualitatif & RnD". Bandung: Alfabeta, 2009.

- [15] A. Suherman, "Evaluasi Pendidikan Jasmani (Asesmen Alternatif terhadap Kemajuan Belajar Siswa Sekolah Dasar)". Jakarta: Direktorat Jenderal Olahraga Depdiknas, 2001.
- [16] Sukadiyanto, "Teori dan Metodologi Melatih Fisik Petenis". Yogyakarta: Fakultas Ilmu Keolahragaan, Universitas Negeri Yogyakarta, 2002.
- [17] S. Sukadji, "Menyusun dan Mengevaluasi Laporan Penelitian". Jakarta: Universitas Indonesia Press, 2000.
- [18] Tennis Canada Coaching Certification System, "Coach 1 ("Assistant Coach")". Canada: Coaching Association of Canada, 1988.
- [19] Tomoliyus, P. Sukoco, "Pengembangan Model Penilaian Berbasis Kinerja Hasil Belajar Penjasorkes Materi Permainan Net Bagi Siswa Sekolah Dasar", Seminar Nasional Teknologi Olahraga, Malang: Pascasarjana Universitas Negeri Malang, 2015.
- [20] Universitas Negeri Yogyakarta, Peraturan Akademik 2014. Yogyakarta: UNY Press, 2014.
- [21] M. Veal, "The Role of Assessment In Secondary In Physical Education: A Pedagogical View". Journal of Physical Education, Recreation & Dance, 1992, vol. 63, no. 7, pp. 88-92.