

Human Expertise Development & Skill Acquisition

PET5936 | Class 18446 | 3 Credits | Spring 2025

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Course Info

INSTRUCTOR

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OFFICE HOURS

Excluding UF Holidays:

Tuesday: 1100am-100pm

Wednesday: 930-1130am

Available by appointment when scheduled at least 1 business day in advance.

COURSE ACCESS

Access course through [Canvas on UF e-Learning](#) & the **Canvas** mobile app by **Instructure**

COURSE DESCRIPTION

This course covers skill acquisition and expertise development in human performance with specific coverage of the role that perceptual, cognitive, and motor (movement) skills are necessary and trainable aspects of human expertise. This course links the theory of human learning with the practice of scientifically informed approaches to teaching, coaching, and skill development facilitation across myriad human performance domains.

COURSE OVERVIEW

PET5936 - Human Expertise Development & Skill Acquisition: Every action we make requires the delicate balance of sensory input with a highly orchestrated multisensory response, a response process that is shaped and pruned repetition after repetition. Skill acquisition and the development of expertise has long believed to be the result of tireless and arduous work. This course is designed to highlight the most salient research enhancing our understanding of the mechanisms associated with skill acquisition and the practical processes known to enhance learning, skill execution, and expertise. This course is divided into 5 modules that include an introduction to expertise and skill acquisition, the fundamentals of skill acquisition and skill modification, the role of the learning environment and the necessary elements for skill acquisition and optimization, perceptual

cognitive expertise, and the psychological skills necessary for optimizing learning and performance, all with the goal of enhancing the transfer of skills from the practice environment to the performance arena.

PREREQUISITE KNOWLEDGE AND SKILLS

This course has no prerequisites but is intended for a graduate student audience. Students enrolled should expect graduate level content and workloads.

REQUIRED AND RECOMMENDED MATERIALS

Required:

- Hodges, N.J. & Williams, A.M. (2020). Skill Acquisition in Sport: Research Theory and Practice.
 - Paperback - ISBN: 978-0-8153-9284-2
 - E-book - ISBN: 978-1-351-18975-0

- Baker, J. & Farrow, D (2017). Routledge Handbook of Sport Expertise.
 - Paperback - ISBN: 978-1-138-29507-0
 - E-book - ISBN: 978-1-315-77667-5

- Lemov, D., Woolway, E., & Yezzi, K. (2015). Perfect Practice.
 - Paperback - ISBN: 978-1-118-21658-3

Additional materials will be assigned and available through the UF E- Learning course shell. A list of additional resources is available at the end of the Syllabus.

COURSE FORMAT

This course is offered in an asynchronous format, organized into 5 modules. Within each module, students will have the opportunity to engage in course content and graded learning activities. The learning activities are designed to catalyze student achievement of the following course goals and objectives.

COURSE LEARNING OBJECTIVES:

1. To facilitate opportunities for student understanding of:

- the scientific evidence and theoretical perspectives accounting for the development of expertise.
- the various factors that influence skill acquisition and skill execution including, the learning environment and the principles of reinforcement.
- perceptual-cognitive expertise.
- psychological skills essential for optimizing learning and performance.

2. To facilitate student's ability to analyze and evaluate:

- emerging scientific literature in expertise, skill acquisition, skill execution, and transfer.
- engaging in critical, constructive, and diplomatic academic discussions of relevant expertise and skill acquisition topics and scientific literature.

- human movement in sport.
- verbal and written communication of scientific knowledge in the expertise and skill acquisition domain.

Course & University Policies

ATTENDANCE POLICY

This is an asynchronous course, and you are not expected to physically be on UF's campus at any time. However, you are expected to participate in course discussions, YellowDig, and regularly engage with course content.

PERSONAL CONDUCT & ACADEMIC INTEGRITY

Students are expected to exhibit behaviors that reflect highly upon themselves and the University. UF students are bound by The Honor Pledge which states:

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

The [Student Honor Code and Conduct Code \(Regulation 4.040\)](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course. Students are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor, graduate assistant, or teaching assistant in this class.

APPROPRIATE USE OF AI TECHNOLOGY

The UF Honor Code strictly prohibits *cheating*. The use of any materials or resources prepared by another person or Entity (inclusive of generative AI tools) without the other person or Entity's expressed consent or without proper attribution to the other person or Entity is considered *cheating*. Additionally, the use of any materials or resources, through any medium, which the Faculty / Instructor has not given express permission to use and that may confer an academic benefit to a student, constitutes *cheating*.

COPYRIGHT STATEMENT

The materials used in this course are copyrighted. Course content is the intellectual property of Garrett Beatty, and property of the University of Florida. Course content may not be duplicated in any format without explicit permission from the College of Health and Human Performance, UF, and Dr. Derek Mann. Course content may not be used for any commercial purposes. Individuals violating this policy may be subject to disciplinary action or legal litigation from the University and other injured parties.

EXAM MAKE-UP POLICY

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Unless excused based on University [policies](#), missed examinations and non-submitted or late assignments will not be evaluated and will be assigned a grade of 0.

Obtaining approval for make-up exams or make-up assignments is the responsibility of the student. Students with medical or emergency related circumstances should utilize the UF Care Team's [Contact My Instructor](#) service provided by the UF Dean of Students Office.

Any non-medical or emergency related circumstances require students to submit a written request explaining why an exception is being requested. The written request must include official documentation that provides proof that the missed coursework was due to acceptable reasons outlined by university policy.

ACCOMMODATING STUDENTS WITH DISABILITIES

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting their [Get Started](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. Accommodations are not retroactive; therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

COURSE EVALUATIONS

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available [here](#). Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, or in their Canvas course menu under GatorEvals, you can also access the course evaluations [here](#). Summaries of course evaluation results are available to students and can be found [here](#).

Getting Help

HEALTH & WELLNESS

- **U Matter, We Care:** If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- **Counseling and Wellness Center:** Visit the [Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- **Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need or visit the [Student Health Care Center website](#).
- **University Police Department:** Visit [UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- **UF Health Shands Emergency Room / Trauma Center:** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; or visit the [UF Health Emergency Room and Trauma Center website](#).
- **GatorWell Health Promotion Services:** For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.

ACADEMIC RESOURCES

- **E-learning technical support:** Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- **Career Connections Center:** Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- **Library Support:** Various ways to receive assistance with respect to using the libraries or finding resources.
- **Teaching Center:** Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- **Writing Studio:** 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- **Student Complaints & Grievances:** Students are encouraged to communicate first with the involved person(s), but [here](#) is more information on the appropriate reporting process.

APK ADMINISTRATORS

For suggestions or concerns related to APK courses or programming, please reach out to any of the following:

- Dr. David Vaillancourt (he/him), APK Department Chair, vcourt@ufl.edu
- Dr. Demetra Christou (she/her), APK Department Vice Chair, ddchristou@hhp.ufl.edu
- Dr. Steve Coombes (he/him), APK Graduate Coordinator, scoombes@ufl.edu
- Dr. Joslyn Ahlgren (she/her), APK Undergraduate Coordinator, jahlgren@ufl.edu

Grading

Student learning will be evaluated through contribution to the Yellowdig online community, guided course discussions, a book review, 2 case study assignments, and 2 exams. Specific assignment details are provided in the course website on [Canvas](#).

- **Yellowdig [Learning Community] - 10%:** Yellowdig is meant to be an information venue for the class to share information and thoughts relevant to the class material and create a sense of community while reflecting on and applying what you are learning in the course. Details are provided in Canvas. Students are expected to engage in Yellowdig weekly and meet the weekly points minimum.

Criteria for Yellowdig

Points for the Yellowdig assignment are accrued throughout the semester and derived from engagement in the Yellowdig community on a weekly basis. The weekly point goal is 1,000 points, but students can earn up to 1,300 points per week. **Each week the goal should be to maximize the point earning goal.** Engagement can consist of asking questions related to the course, answering peer's questions, creating, and engaging in your own debates, sharing media and commentary as it relates to the course.

- **Quora [Online Discussion] - Weeks 2, 4, 6, 8, & 13; 10%.** A discussion question will be posted periodically, throughout the term to Canvas that will challenge your ability to think critically and communicate in written form. Your entries should be thoughtful and articulate and should demonstrate your ability to apply course content. Responses to the discussion post should be no less than 500 words

and should be posted on Canvas each Wednesday of the assigned week by 11:59pm EST. Do not summarize the course contents, instead present your thoughts and reactions and use course content to support, with evidence your thoughts and reactions. You must also respond to two of your classmates' posts no later than Sunday of the week assigned by 11:59pm EST. All responses must be done so with respect and decorum. Your discussion post should be free of major errors in grammar, spelling, and punctuation.

Grading Criteria for Quora

1. The initial post is an original 2- to 3-paragraph response to the instructor-posted question.
2. Initial posting is completed by 11:59 pm on the Wednesday the Quora is created.
3. Two additional posts are completed by 11:59 on Sunday of the week the Quora is created. Each post is in response to other students' original entries that comment on and advance the posts of others.
4. Posts are substantive, present your own ideas and use references where appropriate to support and advance ideas. Equally build on the posts of others, or ask questions to further the discussion (i.e., postings don't just give praise).
5. Posts are supported by relevant sources and are properly referenced.
6. Posts are clearly written with proper spelling and grammar.
7. All questions posed by the instructor and/or fellow classmates are answered in a timely manner (i.e., within 2 weeks of the beginning of the forum)

With the above criteria in mind, scores for each online discussion will be assigned as follows:

10 points	fully meets all criteria
8 points	fully meets Criterion 1, and four to seven of Criteria 2-8
6 points	fully meets Criterion 1, and one to four of Criteria 2-8
4 points	fully meets Criterion 1
0	Does not meet Criterion 1

- **Perfect Practice [Video Book Review] Week 11; 20%.** You will be required to record a video book review of Perfect Practice: 42 Rules for Getting Better at Getting Better by Doug Lemov, Erica Woolway & Katie Yezzi. The goal of this presentation is to reflect on the writings of Lemov and his colleagues and consider how this work relates to the skill-acquisition literature. *Additional information and guidelines are available within the Assignments content area.*

Grading Criteria for Book Review

Element	Met	Partially Met	Not Met
Q#1: Summary & Analysis (25 points)	Summary & Analysis is sufficiently detailed and includes strengths and weaknesses and personal reactions. Presentation is clear, concise, and well organized. Reference to	Summary & Analysis is partially detailed and includes strengths and weaknesses and personal reactions. Presentation is not sufficiently clear,	Summary & Analysis is not included nor includes strengths and weaknesses and/or personal reactions. Presentation is not sufficiently clear,

	the material is included to support the response.	and/or concise, and/or organized. Reference to the material is included but not sufficiently detailed to support the response.	and/or concise, and/or organized. Little to no reference to the material is included to support the response.
Q #2: Passage Summary (20 points)	3 - 5 specific passages that have had the greatest impact on you are identified and sufficiently detailed. Clear reference to the passages are included to support the response.	3 - 5 specific passages that have had the greatest impact on you are identified and partially detailed. At least one reference to the passages is included to support the response.	3 - 5 specific passages that have had the greatest impact on you have not been identified or they are not adequately detailed with little to no reference to the passages is included.
Q #3: Personal Reflection (15 points)	You have sufficiently identified why these passages have had an impact on you. Accompanied with clear and concise examples.	You have partially identified why these passages have had an impact on you. Accompanied with at least one clear and concise example.	You have not sufficiently identified why these passages have had an impact on you. Failed to include at least one clear and concise example.
Q #4: Theory to Practice (25 points)	You have sufficiently connected each passage to a theory addressed throughout the course explained in detail. References to supplemental resources are included to support the response.	You have partially connected each passage to a theory addressed throughout the course. At least one reference to supplemental resources are included to support the response.	You have not adequately connected each passage to a theory addressed throughout the course. References are not included to support the response.
Q #5: Application (10 points)	You have sufficiently identified how you will apply these principles to your practice or coaching	You have partially identified how you will apply these principles to your practice or coaching	Application to practice or coaching is not discussed.
APA Style (5 point)	Citations are included and written in correct APA style.	Citations are included. There are some minor APA style errors.	Citations are not included and/or there are numerous APA style errors.

- **Skill Acquisition Assignment [Case Study] Week 14; 30%.** Students will identify a skilled movement or tactical scenario and teach this skill to a performer of his/her choice. The goal of this assignment is to demonstrate an understanding of the principles of skill acquisition while applying them in a real-world scenario while problem solving and evaluating performance in real time. Your video demonstration and written submission of the Skill Acquisition Assignment should include each of the following elements:

Element	Met	Partially Met	Not Met
Identification of the goal of the movement and the critical components. (10 points)	Identifies and demonstrates an understanding of all the presenting challenges in the case study.	Identifies and demonstrates an understanding of most of the presenting challenges in the case study.	Identifies and demonstrates an understanding of some of the presenting challenges in the case study.
Demonstration of an optimal learning environment coupled with an accurate presentation of the movement. (15 points)	Insightful and thorough analysis of all the presenting concerns.	Insightful and thorough analysis of most of the presenting concerns.	Insightful and thorough analysis of some of the presenting concerns.
Student Demonstration of the skill and analysis of movement including successes and presenting concerns (25 points)	Delivered appropriate and timely feedback. Clearly and concisely identifies errors. Demonstrates effective and appropriate reinforcement of the skill.	Delivered timely feedback. Identified errors. Uses some reinforcement of the skill.	Delivered feedback and identified movement errors. Used some reinforcement of the skill.
Effective Solutions and Interventions (25 points)	Thoughtful and thorough intervention and protocol addressing the issues in the skill execution.	Thoughtful and thorough intervention and protocol addressing most of the issues in the skill execution.	Thoughtful and thorough intervention and protocol addressing some of the issues in the skill execution.
Connecting Theory to Practice with links to course readings and relevant research. (20 points)	All intervention strategies are adequately supported with relevant research and links to course readings.	Most intervention strategies are adequately supported with relevant research and links to course readings.	Some intervention strategies are adequately supported with relevant research and links to course readings.
APA Style (5 point)	Citations are included and written in correct APA style.	Citations are included. There are	Citations are not included and/or there

		some minor APA style errors.	are numerous APA style errors.
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- **Coach’s Challenge [Quizzes] – Weeks 3, 5, 7, 9, 12, & 15; 30%.** There will be 6 quizzes throughout the semester based on the assigned readings and supplemental course materials. Each quiz will be completed via Canvas. Quizzes will consist of multiple choice, true/false, and/or short answer questions. If you miss a quiz it may be made up at the discretion of the instructor provided adequate notice is afforded in advance of the test and appropriate documentation is provided within 24hrs of the quiz.

Additional information and guidelines are available within the Assignments content area.

Final grade composition:

- Yellowdig: 10%
- Quora: 10%
- Video Book Review: 20%
- Case Study: 30%
- Coach’s Challenge: 30%

Course letter grades based on cumulative grade percentages:

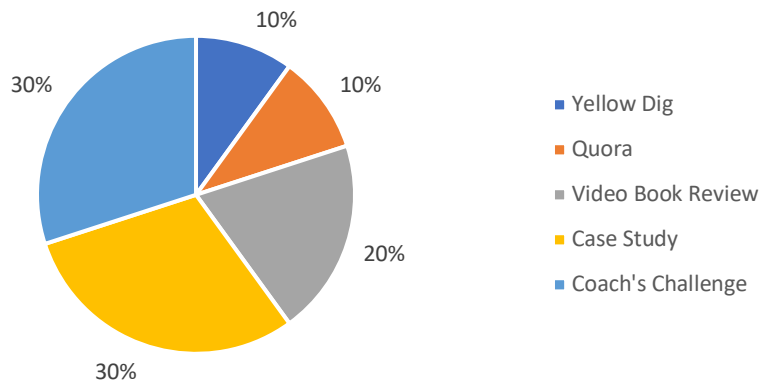
<u>Grade</u>	<u>Percentage</u>	<u>Grade Points</u>
A	93 - 100 %	4.00
A-	90 - 92.99 %	3.67
B+	87 - 89.99 %	3.33
B	83 - 86.99 %	3.00
B-	80 - 82.99 %	2.67
C+	77 - 79.99 %	2.33
C	73 - 76.99 %	2.00
C-	70 - 72.99 %	1.67
D+	67 - 69.99 %	1.33
D	63 - 66.99 %	1.00
D-	60 - 62.99 %	0.67
E	0 - 59.99 %	0.00

Notes:

- Grades will not be rounded
- e.g. a 92.99% will not be rounded to a 93.00%.
- Grades of “I”, “X”, “H”, or “N” will not be given except in cases of a documented, catastrophic occurrence.

More detailed information regarding current UF grading policies can be found here: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

Grade Breakdown



Weekly Course Schedule

CRITICAL DATES & UF OBSERVED HOLIDAYS

- January 20: Martin Luther King, Jr. Day (Monday)
- March 15 – 22: UF Spring Break (Monday - Friday)
- April 24 – 25: UF Spring Semester Reading Days (Thursday – Friday)
- Complete list available here: [Critical Dates & UF Observed Holidays](#)

WEEKLY SCHEDULE

Week	Dates	Assigned Module & Schedule Notes	Readings	Assessments Due:
1	January 13-17	Module 1 Intro to Expertise & Skill Acquisition in Sport	CH1 – A Brief Review of the Historical Foundations of Sport Expertise (RH) CH2 – Expert Anticipation and Pattern Recognition (RH)	<i>Jan 15:</i> Yellowdig <i>Jan 19:</i> Quora Welcome
2	January 20-24	Module1 Expertise & Skill Acquisition in Sport	Functional Sport Expertise (Canvas) What Exactly is Acquired During Skill Acquisition (Canvas) CH3 – Aiming for Excellence (RH)	<i>Jan 22:</i> Yellowdig <i>Jan 26:</i> Quora 1
3	January 27-31	Module1 Expertise & Skill Acquisition in Sport	CH5 – Information-Movement Coupling as a Hallmark of Sport Expertise (RH) CH6 – How Experts Make Decisions in Dynamic, Time Constrained Sporting Environments (RH) CH10 – Operationalizing Deliberate Practice for Performance Improvement (SAiS)	<i>Jan 29:</i> Yellowdig Feb 2: Coach's Challenge 1
4	February 3-7	Module 2 Skill Acquisition & Skill Modification	CH1 – Enhancing Motor Skill Acquisition with Augmented Feedback (SAiS) CH2 – Changing Automated Movement Patterns (SAiS)	<i>Feb 5:</i> Yellowdig <i>Feb 9:</i> Quora 2

5	February 10-14	Module 2 Skill Acquisition & Skill Modification	CH3 – Errors, Rewards, & Reinforcement (SAiS) CH 7 – Movement Automaticity (RH)	Feb 12: Yellowdig Feb 16: Coach’s Challenge 2
6	February 17-21	Module 3 The learning Environment	Development of Elite Performance (Canvas) CH6 – Contextual Interference: New Findings, Insights, & Implications for Skill Acquisition (SAiS) CH9 – Constraints-Led Learning in Practice: Designing Effective Learning Environments (SAiS)	Feb 19: Yellowdig Feb 23: Quora 3
7	February 24-28	Module 3 The learning Environment	CH12 – Expert Performance in Sport: Ecological Dynamics (RH) CH24 – Issues & Challenges in Developing Representational Tasks in Sport (RH)	Feb 26: Yellowdig Mar 2: Coach’s Challenge 3
8	March 3-7	Module 3 The learning Environment	CH36 – Five Evidence Based Principles of Effective Practice & Instruction (RH) CH17 – Appropriate Failure to Create Effective Learning: Optimizing Challenge (SAiS)	Mar 5: Yellowdig Mar 9: Quora 4
9	March 10-14	Module 3 The learning Environment	CH18 – Ecological Dynamics and Transfer from Practice to Performance (SAiS) Skill Acquisition: Designing Optimal Learning Environments (Canvas)	Mar 12: Yellowdig Mar 16: Coach’s Challenge 4
10	March 17-21	SPRING BREAK – No Class		
11	March 24-28	Module 4 Perceptual-Cognitive Expertise	Perceptual-cognitive expertise in sport: a meta-analysis. (Canvas) Vision and expertise for interceptive actions in sport. (Canvas)	Mar 26: Yellowdig Mar 30: Perfect Practice: Book Review

12	Mar 31 - Apr 4	Module 4 Perceptual-Cognitive Expertise	Perceptual-Cognitive Training of Athletes. (Canvas) CH 13 – Perceptual-Cognitive Expertise and Simulation-Based Training in Sport (SAiS)	Apr 2: Yellowdig Apr 6: Coach's Challenge 5
13	April 7 - 11	Module 5 Attention & Psychological Skills for Optimizing Learning & Performance	CH5 – Advances in Implicit Motor Learning (SAiS) Implicit and Explicit Learning in Interceptive Actions. (Canvas)	Apr 9: Yellowdig Apr 13: Quora 5
14	April 14 - 18	Module 5 Attention & Psychological Skills for Optimizing Learning & Performance	CH22 – Psychological Determinants of Expertise: Emotional Reactivity, Psychological Skills & Efficacy (RH) CH15 – Staying Cool Under Pressure: Developing and Maintaining Emotional Expertise in Sport (SAiS)	Apr 16: Yellowdig Apr 20: Skill Acquisition: Case Study
15	April 21 -23	Module 5 Attention & Psychological Skills for Optimizing Learning & Performance	CH5 – Motor Imagery Practice and Skilled Performance in Sport (SAiS)	Apr 23: Coach's Challenge 6

SUCCESS AND STUDY TIPS

Quora's are designed as review and mastery tools for the course, setting the stage for both Case Studies and Coach's Challenges. Learning is a process that requires sustained, incremental advancements and occurs over time following neural adaptation. More simply stated, cramming may yield short-term results, but this strategy does not induce meaningful or lasting learning. Quora's include questions requiring reflection and application of material.

Case Studies are designed to facilitate skill development in retrieving, consuming, and communicating scientific evidence for the enhancement of individual and team success. Case Studies require substantial preparation to execute successfully.

Yellowdig is an asynchronous student engagement platform. Students should plan to participate weekly by posting course relevant thoughts, observations, questions; and responding to peers. Points are accrued on a weekly basis, so it is critical that students do not fall behind as it is nearly impossible to catch up on missed weeks.

Coach's Challenges are designed as summative assessments. All module materials are intentionally designed to help students prepare for each Coach's Challenges.

SUPPLEMENTAL READING REFERENCE LIST

- Araujo, Duarte & Davids, Keith. (2011). What Exactly is Acquired During Skill Acquisition? *Journal of Consciousness Studies*, 18, 7-23.
- Ericsson, A.K. (2003). Development of Elite Performance and Deliberate Practice: An Update from the Perspective of the Expert Performance Approach. In J. Starks & A.K. Ericsson (Eds.). *Expert Performance in Sports Advances in Research on Sport Expertise*. Human Kinetics.
- Faubert, J., & Sidebottom, L. (2012). Perceptual-Cognitive Training of Athletes. *Journal of Clinical Sport Psychology*, 6(1), 85-102. <https://doi.org/10.1123/jcsp.6.1.85>.
- Gulbin, J., & Weissensteiner, J. (2013). Functional Sport Expertise. In D. Farrow, J. Baker, & C. MacMahon (Eds.). *Developing Sport Expertise: Researchers and Coaches put Theory into Practice* (2nd ed.). Routledge.
- Mann, D. L. (2010). Vision and expertise for interceptive actions in sport. <https://doi.org/10.26190/unsworks/22916>.
- Mann, D. T., Williams, A. M., Ward, P., & Janelle, C. M. (2007). Perceptual-cognitive expertise in sport: a meta-analysis. *Journal of sport & exercise psychology*, 29(4), 457–478. <https://doi.org/10.1123/jsep.29.4.457>.
- Vickers, J.N. (2011). Skill Acquisition: Designing Optimal Learning Environments. In D. Collins, A. Button, & H. Richards (Eds.). *Performance Psychology: A Practitioner's Guide*. Churchill Livingstone.