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Paul G. Schempp
University of Georgia

Bryan A. McCullick
University of Georgia

Christopher Busch
University of Georgia

Collin A. Webster
University of Wollongong, cwebster@uow.edu.au

Ilse Sannen Mason
University of Georgia

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The Self-Monitoring of Expert Sport Instructors

Paul G. Schempp, Bryan A. McCullick, Christopher A. Busch, Collin Webster and Ilse Sannen Mason
Sport Instruction Research Laboratory,
University of Georgia, Athens, GA 30602, USA
Email: sportlab@uga.edu

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ABSTRACT
This study identified the major facets of professional practice monitored by expert teachers. Specifically, the skills and knowledge expert sport instructors regularly scrutinized in order to improve their teaching and coaching were categorized and examined. Data were collected from 31 teachers listed by Golf Magazine as the Top 100 Golf Instructors in America. The teachers listed aspects of their teaching they regularly monitored in assessing their own strengths and weaknesses. Data were analyzed in three steps. First, responses were reviewed to identify the characteristics monitored by the teachers. Second, characteristics grouped under each theme were reviewed and clustered into representative categories. Third, all categories were reviewed to ensure every characteristic identified by the teachers was accounted for by theme or category, and that the investigators unanimously agreed to the coding of each characteristic. From this process, five themes were constructed that represented the activities and qualities most often monitored by expert teachers: (a) skills (i.e., things teachers do), (b) knowledge base (i.e., things teachers know), (c) personal characteristics (i.e., things teachers are), (d) philosophy (i.e., things teachers believe), and (e) tools (i.e., things teachers use).

Key Words: Self-Monitoring, Expert Teaching, Sport Instruction, Golf Instruction

THE SELF-MONITORING IN EXPERT SPORT INSTRUCTORS

Learning a skill or acquiring knowledge in any discipline requires an instructional source. Those seeking knowledge often search for the most reliable and comprehensive source available. This logic presents a quandary for those who are the best or expert in their fields. How do the best get better? Where do experts turn to discover ways to improve their already outstanding performance? According to prevailing theories of expertise, they often turn to themselves.

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Cognitive psychology offered the first foothold in understanding expertise [1, 2, 3]. In turn, this body of work has influenced educational psychology [4, 5]. The importance of research on the cognition of experts came to light when it was discovered that novices benefit by learning and mimicking the schemata, or thinking patterns, of experts [6].

Berliner [4] suggested that through the study of expert teachers, researchers may learn their patterns and practices and thus, identify beneficial characteristics for teachers, coaches, and the educational community. These identified characteristics of expertise may potentially assist educational programs by improving the instruction of novice teachers. Tan [7] identified seven elements of expertise: a) extensive knowledge base that is domain specific, b) hierarchal organization of that knowledge base, c) acute perceptions, d) problem identification and resolution, e) automaticity of behavior, f) long- and short- term memory, and g) self-monitoring. It is the final element, self-monitoring, that is of interest in the present study, because it is potentially one of the key methods by which the best improve.

Ericsson [3] makes the point that the internal representations or cognitive models of expert performers have two goals. "The first goal is to constantly improve the given level of performance and the second goal is to exhibit the best possible performance that is attainable given the current level of skill" (p. 39). In the larger scheme of cognition, or metacognition, of experts, self-monitoring would be a critical component in constructing mental representations for improving performance levels. From the perspective of teacher cognition, self-monitoring allows teachers to decide which teaching factors can most improve their performance and if or how to make those changes.

Kilbourn [8] believed self-monitoring to be an aspect of professionalism, because the process addresses the central points of an occupation. As a process, "self-monitoring refers to the personal supervision of one's own practice" (p. 722). Self-monitoring is the reflective practice of tracking and recording one's own performance [9, 10]. Self-monitoring inspires a teacher or coach to move beyond an evaluation of one's experiences and engage in an introspective process of critical self-analysis [11]. Through this process, elements of professional practice, which merit increased attention and scrutiny are identified. Goal-setting and behavior change become linked in an on-going critique of performance [11].

There has been extensive research seeking to discover the successful and essential use of self-monitoring in the development of superior performances. Self-monitoring characteristics have been identified and implemented by actors [12], academic students [13, 14], and athletes [15, 16]. There has also been extensive research on the use of self-monitoring and teacher development in various subjects [17, 18, 19, 20]. Most recently, Baylor and Kitsantas [21] conducted research on the validation of self-reflective tools to assist novice instructional planners in the development of effective self-monitoring practices. While self-monitoring has been identified as a crucial process used by expert athletes, musicians, physicists, and writers [9, 16, 22], it remains to be seen if expert coaches or sport instructors use this skill.

The purpose of this study was, therefore, to identify criterion characteristics of professional practice monitored by expert teachers. Specifically, this study endeavored to discover the topics or factors representing both strengths and weaknesses of professional practice that are closely and continually monitored by expert sport instructors.

METHOD

This study is a part of a larger study of expert teachers' self-monitoring. A study of the process and strategies used in self-monitoring using the same participants, but different data has been completed [23]. In the first study, the process of self-monitoring was investigated and in this study the products of self-monitoring were analyzed.

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PARTICIPANTS

The participants in this study were 31 of *Golf Magazine's* Top 100 Golf Instructors in America. These teachers are widely recognized by both the public and the media as among the best teachers of their sport in the United States. The teachers were appointed to the list of Top 100 through a peer and professional organization nomination and then selected by a panel of experts convened by *Golf Magazine*. The panel uses a questionnaire completed by the teachers along with supporting documentation supplied by the teachers. The criteria for selection includes a minimum of 10 years teaching experience, attainment of advanced education or certification, student accomplishments, reputation amongst peers, and teaching philosophy and practices that reflect expertise [5]. The list is reevaluated and refreshed every two years.

The participants in this study were attending the Top 100 Golf Instructor Teaching Summit at the time these data were collected. A table was set up near the registration counter, and the teachers were requested to participate in this study immediately after they registered for the conference. After completing an approved Informed Consent Form, participants were given the survey. The teachers were allowed as much time as they deemed necessary to complete the two question survey form. The teachers were not allowed to discuss their responses with other participants until they had completed the survey. The majority of teachers completed the form in 20-30 minutes.

DATA COLLECTION

Instrument. To collect data that would serve to address the purpose of this study, a survey was developed whereby teachers identified those specific professional practices considered strengths and weaknesses that were monitored on a regular basis. The original survey was pilot tested with four golf instructors who were not participants in this study. Following pilot testing, the survey was modified to improve clarity of directions, yield specific responses, and adjust the time demands placed on the teachers completing the survey.

DATA ANALYSIS.

There were three phases used in analyzing the collected data.

Phase One. The research team independently reviewed the collected data, representing the written survey responses from the 31 teachers. From these responses, the investigators identified and quantified the professional practice components most often monitored by expert teachers. At the completion of this phase, the identified characteristics were compiled from the individual investigators into a single spreadsheet.

Phase Two. The listed characteristics were collectively reviewed by the research team with the intent of identifying themes in the data. Initially, it appeared most, if not all, of the characteristics could be represented by one of four themes. These themes included: (a) personal characteristics (i.e., things teachers are), (b) knowledge base (i.e., things teachers know), (c) skills (i.e., things teachers do), and (d) tools (i.e., things teachers use). To test the validity and comprehensive nature of these themes, the investigators took each listed characteristic in turn and attempted to place them in one of the four categories. Few of the characteristics overlapped, however another theme was added to accommodate a collection of characteristics that did not comfortably fit under the original four themes. A fifth theme was then added: (e) philosophy (i.e., things you believe). The individual characteristics recorded by the teachers were then categorized into one of the five themes.

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Phase 3. The next step in analyzing data was to review the characteristics under each theme in order to group the characteristics into representative categories. First, the characteristics listed by the teachers as strengths were analyzed, followed by the characteristics listed as weaknesses. Unlike the themes, attributes identified as strengths and weaknesses could not be accurately represented by a singular category structure. The category structures for the strengths and weaknesses were, therefore, not identical. That is, there were characteristics that may have been identified by some teachers as strengths and some teachers as weakness, characteristics that were only identified as weaknesses, and several characteristics that were identified only as strengths by the teachers.

RESULTS

Data analysis revealed five themes representing the characteristics or factors in professional practice monitored by expert teachers: (a) skills (i.e., things teachers do), (b) knowledge base (i.e., things teachers know), (c) personal characteristics (i.e., things teachers are), (d) philosophy (i.e., things teachers believe), and (e) tools (i.e., things teachers use). Under these themes, discrete categories were identified. In the following section, each theme will be defined and categories explained.

Skills. This theme represented the tasks teachers undertook in meeting their professional obligations. The experts monitored this area most often, with over twice as many characteristics identified when compared to other themes. This finding suggests that expert teachers most often monitored those actions that could be improved with increased practice and knowledge. This finding supports previous research, which identified coaching skills as highly valued by accomplished teachers [24]. Ninety-three characteristics were classified into six different categories and comprised the theme: skills.

Of these skills, the one mentioned most often as being monitored by our participants was instruction. Instruction represented teachers' actions that most directly impacted student learning. Within the instructional skills regulated, the researchers found consistent groupings of characteristics in the following areas: a) pedagogical skills, b) communication, c) golf skills, d) lesson structure, e) analytic skills, and f) administration skills. The researchers felt these subdivisions better clarified the self-monitoring characteristics identified with respect to instruction.

Pedagogical skills, the most frequently cited characteristic (n=25), included competencies such as, "metaphor and image use," "timing," "vocabulary used," "elicit self-discovery." For one teacher, this meant monitoring "my ability to adjust my teaching to the student's strengths." For another teacher, it meant findings ways of "making the instruction simple and doable." Previous research has shown that it is the quality of teachers' pedagogical skills that makes them most memorable in the minds of students [25]. Therefore, it appears fitting that the expert teachers in this study would select pedagogical skill as the skill most often monitored.

Another important aspect of the skills theme was the category of communication. Communication was viewed as a critical skill in expert teaching, as evidenced by it being regulated by 45% of the expert teachers in this study. An example of such communication was found in the report of one teacher who stated:

> "I have worked hard to make sure of the meaning of words. I am very careful to make my words mean what I want, and that the lines of communication are open. This is an ongoing awareness."

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Another teacher wrote that they monitor, "being able to listen to the student and then making sure that the student hears what you are saying back to them." Other communication skills monitored by the teachers included: "clear and organized communication," "visual communication," "delivery of information," and "asking for questions."

The instructor's ability to perform golf skills, the second subcategory of instructional skills, was monitored due to the instructor's belief that explaining and demonstrating the spectrum of skills required to play golf was fundamental to sound instruction. Among the skills reported in this area were the ability to "correct ball flight within 20 minutes," "club fitting," "stick with the basic fundamentals," and using "cause and effect instruction, which is related back to ball flight." One teacher reported his self-monitoring led him to "study various short game (teaching) styles in trying to improve my approach."

Lesson structure identified characteristics focused on specific portions of the lesson such as planning, content introduction and integration, or pacing of instruction. One teacher reported that she closely monitored the final part of the lesson: "…closing the lesson when I know it needs to close. The students always want more information than they can handle." Another subcategory of instructional skills was the ability to motivate students. A competent command and improvement in these skills led teachers to stimulate students to learn, practice and appreciate the game of golf. To one teacher, "keeping people motivated to improve is one of the keys to any instructor's success."

Analytic skills are also monitored by teachers, but less so than instructional and communication skills. The ability to diagnose and analyze student performance is an important aspect of offering effective instruction, so attention to analysis is deemed necessary. "Diagnostic ability [allows me] to determine what is the best way to make the student aware of what their problem is, and then help them become more aware of how to correct it." Another teacher reported:

> "I ask interview questions, check physical limitations, and get a complete picture before I make my decisions about where to take the lesson. I keep an eye on developments that would strengthen my assessment skills."

The final skill monitored by the studied experts was administration. Skills in this category included "better record keeping" and "scheduling." Interestingly, only seven teachers mentioned this skill, it did not, therefore, appear to be critical to expert instruction. In comparing the nature of these skills to those mentioned more often, administrative skills appear ancillary to the role of teaching and coaching while instruction, communication and analytic skills represent the core of expert teachers' skill competencies. In other words, the level of one's expertise in administrative skills has potentially little bearing on one's expertise as a teacher, but being highly skilled in instruction, communication and analysis may be, as implied by the self-regulation of these expert teachers, central skills for expert teaching.

Knowledge Base. Teachers' knowledge base was the second largest theme identified by the researchers and defined by the things teachers knew. This theme included 42 characteristics that were classified in seven categories of knowledge: a) golf, b) learners/students, c) kinesiology, d) teaching, e) business, f) technology, and g) general. Golf knowledge was the knowledge category that was most often monitored. Specifically, this category represented the information the expert teachers gathered and possessed relative to all aspects of golf. The areas of golf knowledge identified by these teachers included, "golf stroke engineering," "bunker game," "knowledge of the short game," and "club fitting." One teacher in our sample who regularly appears on American television due to his knowledge of

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equipment and golf-related fitness reported monitoring: "my understanding of equipment and how it affects the golf swing. I work with club manufacturers to get a better grasp of shafts, balls, etc."

Knowledge of the sport was the area of knowledge most often monitored by expert teachers, but knowledge of students followed closely behind in the scrutiny received by the experts. Having knowledge of students and understanding their strengths and barriers was an important characteristic of self-monitoring for 10 out of the 31 teachers in this study. The importance can be seen from one teacher's account:

"I would like to learn more about research on human learning – especially adult learning. I have begun to spend more of my spare time broadening my knowledge of what I consider to be a weakness and I believe this will help me help my students."

Other areas of knowledge reported as being self-monitored included knowledge of kinesiology, teaching, business, technology and general (see Table 2). For the most part, however, these knowledge areas were reported by approximately 10% of the teachers or less. They did not, therefore, appear to be critical in the self-regulating activities of these expert teachers.

Table 1. Categorical breakdown for Skills.

Theme	Category /	Subcategory	Number of Identified Characteristics
Skills	Instruction		47
		Pedagogical Skills (25)	–
		Golf Skills (11)	
		Lesson Structure (9)	–
		Motivation (7)	–
	Communication		20
	Analysis		10
	Administration		7
	Golf (personal)		5
	Developing Teacher/Student Rapport		4
	Total =		93

Table 2. Categorical breakdown for Knowledge Base.

Theme	Category	Number of Identified Characteristics
Knowledge Base		
	Golf	13
	Learners / Students	10
	Kinesiology	6
	Teaching	4
	Business	3
	Technology	3
	General	3
	Total =	42

Personal Characteristics. Personal characteristics represented the qualities of teachers and represented 18% of the self-monitoring activity reported by the teachers in this study. Within this theme, caring was the category most often monitored. Caring has often been

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recognized for its role in expert teaching, and therefore this finding came as little surprise [26, 27, 28]. Teachers who mentioned that they monitored their compassion and commitment to students and the profession were numerous. One expert teacher stated, "My commitment is to my student – I build long-term relationships with my students and create a plan to help the golfer reach their goals."

Disposition was mentioned by six teachers. A teacher's disposition was monitored when it appeared to interfere with effective instruction. For example, one teacher wrote that being "strong-willed can lead to being narrow-minded." There were instances, however, when a teacher's disposition was monitored for its positive contributions to a lesson: "Trying to get into their (students') shoes. Empathy is what fascinates me."

The remaining characteristics reveal distinct qualities that were monitored for the potential influence these characteristics had on the instructional process (see Table 3). Passion, trust, joy and patience, for example, were seen as contributors to effective teaching. While balancing one's lifestyle, maintaining fitness and having a curious mind were seen as contributing to the teacher's ability to provide the best instruction possible. None of these categories were mentioned more than a few times and therefore not considered major trends in the self-monitoring of expert teachers.

Table 3. Categorical breakdown for Personal Characteristics.

Theme	Category	Number of Identified Characteristics
Personal Characteristics		
	Caring	10
	Disposition	6
	Passion	4
	Trust	4
	Joy	4
	Patience	2
	Lifestyle	2
	Fitness	2
	Curious Analytical Mind	1
	Open Minded	1
	Staleness	1
	Total =	37

Philosophy. This theme identified the areas of teachers' beliefs. Given that the experts in this study had on average 17 years of experience, it is logical to assume that their beliefs would be relatively stable, which may offer a plausible explanation for the limited self-monitoring in this theme relative to skills, knowledge and personal characteristics (i.e., 29 identified characteristics versus 93, 42 and 37 respectively). The teachers who monitored their philosophy appeared to fall into two categories: (a) those who wanted to insure faithfulness to their beliefs, and (b) those who wanted to consider the beliefs of others. These were not necessarily mutually exclusive perspectives.

An example of monitoring practices to insure faithfulness to one's beliefs can be evidenced in the report of one teacher who wrote:

"[Because] the learner is more important than the teacher, workable efficient instruction is a student-centered environment that tries to help improve the learning potential of the learner only so the learner can develop insights and tools to change their own poor habits."

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As a method of self-monitoring their own beliefs, several teachers reported that they liked to listen to others' share beliefs about teaching. In this way, the expert teacher can test the efficacy of their own beliefs regarding instruction and consider alternatives. As an example, one teacher reported that he liked, "talking to different instructors that teach a certain belief about why their way is best."

Within the philosophy theme were four categories: (a) student (beliefs about learner needs and characteristics), (b) content (beliefs about what to teach), (c) instruction (beliefs about the purpose and ways of teaching), and (d) programmatic (beliefs about the structure of teaching) (see Table 4). Topics that were monitored for the potential influence regarding the student included, "commitment to student," "individuality," "teach and learn form the student," and the "general improvement of each student." Beliefs monitored relative to content included a focus on "fundamentals" and the need to "stick to basics." Instruction oriented beliefs included "individualizing the lesson," "student oriented instruction," and "to do, observe, and adjust."

Table 4. Categorical breakdown for Philosophy.

Theme	Category	Number of Identified Characteristics
Philosophy		
	Student	10
	Content	9
	Instruction	9
	Programmatic	1
	Total	29

Table 5. Categorical breakdown for Tools.

Theme	Category	Number of Identified Characteristics
Tools		
	Technology	4
	Technology Tools	3
	Performance Tests	1
	Administration	1
	Total	9

Tools. The final theme, tools, was defined as the aids teachers used in their teaching. The characteristics within this theme identified the need to incorporate the use of technology, as well as improve on its use during teaching. The use of technology was also identified in their record keeping of student performance and managerial aspects of teaching. One expert teacher felt that "the use of video/technology" was very important, saying, "video and other technologies [could] speed the learning process," and "by keeping up with the latest versions of technology I feel I gain an edge in my ability to communicate with my students."

The value of monitoring instructional tools can be seen in research conducted by Allinder [17], who discovered that teachers who self-monitored their use of curriculum-based measurement were able to effectively revise instructional plans in ways that promoted student achievement over teachers who did not monitor the use of this tool. It would, therefore, seem that these expert teachers recognize the importance of monitoring their instructional tools as a method of increasing the learning of their students and their effectiveness as teachers.

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With less than 30% of the teachers identifying this area as a target for self-monitoring, it appears that compared to other aspects of professional practice, tools do not place highly. This may be due to the apparent disparity in beliefs regarding various tools for teaching. Consider the evidence from the use of video analysis. One teacher was straight forward in his condemnation: "I have found generally that most high tech teaching aids have been a waste of the students' time." Another seemed uncertain as she is "deciding on video's effectiveness and its appropriateness (in teaching)." And still another believes that "I feel that I have gotten so much better as a teacher by my thorough diagnosis of the student's problem through video analysis." Perhaps if the effectiveness of teaching tools was less contested, they would be more closely monitored. Among those who seem to value teaching aids, however, these are monitored often.

SUMMARY AND RECOMMENDATIONS

If the skills, knowledge, personal attributes, philosophy and tools monitored by expert teachers offer insight into what it takes to be a great teacher, this study provides some useful findings to those aspiring to elevate their coaching and teaching practices. Those responsible for coaching and teaching certification programs may also find the results of this study instructive.

The findings of this study revealed that both the scope and breadth of topics monitored by expert sport instructors were extensive. At the top of the list of areas regulated and monitored by these teachers were the skills necessary to successfully complete their mission as teachers. "Skills" received twice as much attention and recognition in self-monitoring by expert teachers than any other area. This finding suggests that for those who wish to climb the ladder of expertise in teaching and coaching, a careful accounting and monitoring of one's professional skills may be a good starting point. The findings may also lend support to the notion that experts are able to, "disembed meaningful and pertinent information from less important information" [29, p 38]. When these experts were asked what they self-monitored they overwhelmingly mentioned instructional skills, which are at the core of teaching and failed to mention that they self-monitor ancillary items.

Skills alone will not propel one to the level of expert. While closely monitored and highly developed skills may be requisite, knowledge appears to also be an important component of the expert teachers' arsenal. "Knowledge," the second most often monitored quality has often been linked with expertise [1, 3], and teaching is no exception [5, 30].

While not extensively mentioned in previous research or theories on expert teaching and coaching, the experts in this study identified personal characteristics as targets for self-monitoring. They saw caring, disposition, passion, trust, joy and other personal qualities as essential characteristics to be monitored and adjusted. It therefore seems that personal characteristics play a role in the professional actions of expert golf instructors. Sarason's [31] notion that teachers, "desire to be caring and compassionate" (p. 1) and want to display this to students may hold true for expert golf teachers.

Finally, philosophy and teaching tools received scrutiny under the process of self-monitoring. Checking one's beliefs and the tools used in undertaking the task of teaching sport, while not major factors, were concerns nonetheless of expert teachers. For one aspiring to become the best, these areas should be regularly monitored.

This research is the first of its kind and calls for additional research are necessary before definitive insights can be established. The study does, however, provide an interesting glimpse into the characteristics of professional practice that noted experts on golf teaching attend to and monitor closely.

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REFERENCES

1. Chi, M.T.H., Glaser, R., & Farr, M., *The Nature of Expertise*. Lawrence Erlbaum, Hillsdale, NJ, 1988.
2. Ericsson, K.A. & Smith, J., eds., *Toward a General Theory of Expertise*, Cambridge University Press, Cambridge, MA, 1991
3. Ericsson, K.A., *The Road to Excellence: The Acquisition of Expert Performance in the Arts and Sciences, Sports, and Games*, Lawrence Erlbaum Associates, Mahwah, NJ, 1996.
4. Berliner, D. C., In Pursuit of the Expert Pedagogue, *Educational Researcher*, 1986, 15(7), 5-13.
5. Berliner, D.C., Expertise: The Wonder of Exemplary Performances, in: Mangieri, J. & Block, C., eds., *Creating Powerful Thinking in Teachers and Students: Diverse Perspectives*, Harcourt Brace College, Fort Worth, Texas, 1994, 161-186.
6. Sparks-Langer, G., & Colton, A., Synthesis of Research on Teachers' Reflective Thinking, *Educational Leadership*, 1991, 48, 37-44.
7. Tan, S., The Elements of Expertise, *Journal of Physical Education, Recreation, and Dance*, 1997, 68(2), 30-33.
8. Kilbourn, B., Self-Monitoring in Teaching, *American Educational Research Journal*, 1991, 28(4), 721-736.
9. Zimmerman, B.J., Academic Studying and the Development of Personal Skill: A Self-Regulatory Perspective, *Educational Psychologist*, 1998, 33(2/3), 73-86.
10. Cole, C. & Bambara, L., Self-Monitoring: Theory and practice, in: Shapiro, E.S. and Kratochwill, T., eds., *Behavioral Assessment in Schools*, The Gilford Press, New York, 2000, 220-227.
11. Karoly, P., Mechanisms of Self-Regulation: A Systems View, *Annual Review of Psychology*, 1993, 44, 23-53.
12. Lan, W., & Morgan, J., Videotaping as a Means of Self-Monitoring to Improve Theater Students' Performance, *The Journal of Experimental Education*, 2003, 71(4), 371-381.
13. Lan, W.Y., The Effects of Self-Monitoring on Students' Course Performance, Use of Learning Strategies, Attitude, Self-Judgment Ability, and Knowledge Representation, *Journal of Experimental Education*, 1996, 64, 101-115.
14. Manning, M., Self-Monitoring Reading, *Teaching PreK-8*, 2002, 32(4), 103-104.
15. Zimmerman, B.J., & Kitsantas, A., Self-Regulated Learning of Motoric Skill: The role of Goal Setting and Self-Monitoring, *Journal of Applied Sport Psychology*, 1997, 8, 60-75.
16. Kitsantas, A., & Zimmerman, B., Comparing Self-Regulatory Processes among Novice, Non-expert, and Expert Volleyball Players: A Microanalytic Study, *Journal of Applied Sport Psychology*, 2002, 14, 91-105.
17. Allinder, R., Effects of Teachers' Self-Monitoring on Implementation of Curriculum-based Measurement and Mathematics Computation Achievement of Students with Disabilities, *Remedial and Special Education*, 2000, 21, 219-228.
18. Belifore, P. & Browder, D., The Effects of Self-Monitoring on Teachers' Data-Based Decisions and on the Progress of Adults with Severe Mental Retardation, *Education and Training in Mental Retardation*, 1992, 27, 60-67.
19. Jacobson, R., Teachers Improving Learning using Meta-cognition with Self-Monitoring Learning Strategies, *Education*, 1998, 118(4), 579-564.
20. Dunn, T. & Shriner, C., Deliberate Practice in Teaching: What Teachers do for Self-Improvement, *Teaching and Teacher Education*, 1999, 15, 631-651.
21. Baylor, A. & Kitsantas, A., A Comparative Analysis and Validation of Instructivist and Constructivist Self-Reflective tools (IPSRT and CPSRT) for Novice Instructional Planners, *Journal of Technology and Teacher Education*, 2005, 13(3), 433-457.
22. Chi, M.T.H., Feltovich, P., & Glaser, R., Categorization and Representation of Physics Problems by Experts and Novices, *Cognitive Science*, 1981, 5, 121-125.
23. Schempp, P. G., Webster, C.; McCullick, B., Busch, C., & Sannen-Mason, I., How the Best Get Better: An Analysis of the Self-Monitoring Strategies Used by Expert Golf Instructors. *Sport, Education & Society*, in press.

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24. Veenman, S., & Denessen, E., The Coaching of Teachers: Results of Five Training Studies, *Educational Research & Evaluation*, 2001, 7, 385-417.
25. Thibodeau, G., & Hillman, S., In Retrospect: Teachers who made a Difference from the Perspective of Pre-Service and Experienced teachers, *Education*, 2003, 24, 169-180.
26. Agne, K., Caring: The expert teacher's edge, *Educational Horizons*, 1992, Spring, 120-124.
27. Larson, A., & Silverman, S., Rationales and practices used by caring physical education teachers, *Sport, Education & Society*, 2005,10, 175-193.
28. Noddings, N., An Ethic of Caring and its Implications for Instructional Arrangements, *American Educational Research Journal*, 96, 1988, 215-230.
29. DeMarco, G. M., & McCullick, B. A., Developing Expertise in Coaching: Learning from the Legends, *Journal of Physical Education, Recreation, and Dance*, 1997, 8(3), 37-41.
30. Turner-Bisset, R., The Knowledge Base of the Expert Teacher, *British Journal of Educational Research*, 1999, 25, 39-56.
31. Sarason, S., *Teaching as a Performing Art*, Teachers College Press, New York, 1999.

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