Insights for Delivering Mental Skills Training over the Web

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Abstract

Technological advances and the emergence of the World Wide Web (or web for short) have increased the opportunities for alternative delivery mechanisms of quality education. The effects are being seen in the field of sport psychology as practitioners and researchers start to use the web to deliver text-based information, market their products and services, communicate with athletes and others in the field, deliver online courses, engage in scholarly discussion, and share and disseminate research (Stodel & Farres, 2000). However, the full capacity of the web as an educational tool which athletes can use to facilitate the development of their mental skills has not yet been harnessed. In this paper, the concept of web-based mental skills training is examined and the potential of what it can become explored. The discussion is framed within the concepts of accessibility and interactivity; two defining features of the web.

In order to allow for concise writing style, the use of the term "athlete" will be employed in this paper to refer to all those who participate in exercise and physical activity. The authors would also like to note that web-based MST can be used by coaches, artistic performers, business professionals, and any other individuals interested in developing their mental skills.

The rapid development of the World Wide Web (or web for short) from a text-only medium to an expanding multimedia communication system has increased the opportunities for alternative delivery mechanisms of quality education. The University of Texas-Austin's web-site contains over 2,000 links to web-pages which are used in the delivery of university-level academic courses (http://www.utexas.edu/world/lecture/index.html). Already, advances in technology and the web are transforming education in the field of physical education (Goggin, Finkenberg, & Morrow, 1997; Martens, 1997). Practitioners and researchers in the field of sport psychology are beginning to explore how they can use the web to their advantage. Most are using the web to deliver text-based information, market their products and services, communicate with athletes and others in the field, deliver online courses, engage in scholarly discussion, and share and disseminate research (Stodel & Farres, 2000). However, the full capacity of the web as an interactive, dynamic educational tool has not yet been harnessed by those in the field. To date, we have been unable to find a fully interactive mental skills training (MST) community on the web that provides athletes with a collaborative learning environment supported by expert practitioners within which they can develop their mental skills.

The absence of such a resource on the web is a pity given that the web offers a convenient, flexible, and cost-effective means of education. Learners are able to learn whatever they want, whenever they want, wherever they want. Moreover, much of the educational appeal of the web comes from its capability to provide users with: (1) convenient access to a wide range of educational resources that they might otherwise not have access to, and (2) the opportunity to interact with the learning environment so they are able to create a personally meaningful learning experience. Given the educational potential of the web, we question why MST specialists are not using the web more effectively as a means of educating athletes and facilitating the development of mental skills, and urge these professionals to start considering how they can best use the web to this end.

The web allows continuous access to MST. Indeed, it is generally advocated that MST be conducted by a qualified MST consultant over an extended period of time (Weinberg & Williams, 1998). However, Weinberg and Williams stated that this is "*rarely feasible except perhaps at the highest levels of competition (and even here it is still a rarity . . .)*" (p. 332). Often, the athletes and/or MST consultants cannot make the time commitment that is necessary for ongoing MST; the athletes, teams, or sport organisations may not have the necessary funds to sustain prolonged MST; or the geographical location of athletes, team members, and MST consultants present a barrier to the provision of long-term MST services (Weinberg & Williams, 1998). By offering MST on the web, athletes[1] would be afforded access to MST anytime and anywhere, thereby breaking down barriers which currently hinder the provision of long-term MST services to those who seek them.

Although many eminent MST consultants have stressed the importance of providing "sport psychology for all" (e.g., Gould, 1990; Weiss, 1998), it has been noted that much applied work is with elite performers (T. Orlick, personal communication, November 24, 1998) and sport psychology books seem "to be geared to the elite level" (Vealey, 1988, p. 321). The web can provide

large numbers of recreational and developing athletes who regularly participate in sport and exercise with a means of gaining access to MST services should they so wish. They can reap benefits from engaging in MST just as elite athletes do, though they may not yet be aware of the personal advantages of engaging in MST. This may be in part due to a lack of understanding about what MST is and what MST consultants do. Some think MST is "only applicable to elite athletes or that [MST] techniques can only fine tune the performance of the already highly skilled" (Weinberg & Williams, 1998, p. 331). Consequently, athletes and coaches not involved in high level competition may not seek out ways to engage in this type of training. However, the web can serve as an effective medium through which to educate athletes and coaches about what MST is and how it can benefit all levels of athletes. Indeed, what better medium exists if the goal is to reach a large number of diverse individuals? In January, 2000, the worldwide Internet population was estimated at 242 million and the number is growing exponentially.

Although there are problems currently associated with access to, and long-term provision of, MST services, there is growing interest in MST among all levels of athletes. This is reflected in the growing numbers of books, popular magazine articles, research publications, and more recently web-sites, which outline ways in which to enhance performance and control cognitive and affective responses through MST (e.g., Orlick, 1986, 2000; Ravizza & Osborne, 1991;Williams,1998; www.competitivedge. com; www.mindtools.com; www.sportdoc.c om/; http://www.zoneofexcellence.com/). Moreover, sport-specific MST books targeted towards recreational athletes are becoming more prevalent on the shelves of

bookstores (e.g., Cogan & Vidmar, 1999; Gallwey, 1998; Rotella, 1995, 1996, 1997; Van Raalte & Silver-Bernstein, 1999). It is apparent that MST specialists are attempting to address the problem of access to MST through the print medium.

Although books make MST more available to athletes, they may be limited in their effectiveness as a tool for MST delivery. It appears that although books can be effective in educating consumers about psychological skills and techniques, many do not provide the necessary guidance to help the reader learn, acquire, and implement mental skills and MST techniques in a systematic fashion (Vealey, 1988). Vealey suggested that in order for this to occur, readers need to be engaged as "active participants" rather than "passive readers". She recommended the use of implementation specialists, standardised MST programs, and video technology as means of promoting active learning and achieving this goal. Since Vealey's recommendations over a decade ago, we have seen the emergence of the web. Its success as a powerful educational tool in diverse fields warrants its consideration as a mechanism through which to deliver MST. By creating opportunities for athletes to interact with both the material and other athletes on the web, not only will they be able to direct their own learning experience, but an active learning environment can be fostered. Consequently, web-based MST has the capacity to maximise the acquisition and application of mental skills and techniques.

The purpose of this paper is to explore the concept of web-based MST. This will be achieved through the consideration of two defining features of web-based learning, namely accessibility and interactivity. In doing this, the utility of creating web-based MST environments will be delineated. Some of the ideas presented in this paper have

been actualised, while others remain in our imagination. It should be noted that it is not an absence of technology that is preventing these concepts from being realised, the technology exists today. It is intended that this paper will stimulate thought and incite further interest in the concept of web-based MST. Given the ever-expanding range of possibilities presented with new technologies, it is important that MST practitioners become proactive in the development and use of technology in the MST process to ensure that it is the educational needs that drive the development of technology and not vice versa.

Accessibility

One of the attractions of web-based MST is accessibility. By creating a web-based MST environment, not only do more athletes have access to MST services, but it also provides them with an easy means of gaining access to an increasingly large number of MST resources

Availability of MST Services

Offering MST on the web increases the availability of MST services to athletes. Athletes who would not normally have access to these types of services because they live in remote locations, cannot afford it, or do not have a qualified MST consultant in their area, are able to log on to the web and receive expert advice for MST. Moreover, athletes who are on the road competing or training are still able to gain access to MST services regardless of their location or the time of day. In short, athletes can mentally train with expert guidance at home, in-between meetings at work, in their pyjamas on a Sunday morning, and in airports while waiting for their plane. There is no need for them to schedule a MST appointment into an already busy schedule, nor be inconvenienced with travel. They can

develop their skills whenever they have time. Not only does the web transcend geographical barriers, but communication on the web is not impacted by the inconvenience of time zones. Computer-mediated communication systems can support both real-time and delayed communication, which allows athletes and MST consultants on opposite sides of the world to communicate with each other whenever they want.

Aside from the convenience and flexibility of being able to engage in MST anytime and anywhere in web-based MST, it is a considerably cheaper means of gaining access to expert MST advice compared to paying consultants' hourly fees. The reduced costs associated with web-based MST makes MST available to athletes who cannot afford to pay consultants' high fees. This may also promote prolonged engagement with MST. In web-based MST, athletes may be required to pay an initial membership fee but then will have unlimited access to certain aspects of the MST services.

It is also reasonable to assume that there are a large number of athletes who would like to engage in MST but would not consider soliciting the services of a MST consultant because they do not consider themselves "serious athletes" or do not want others to know they are engaging in MST. Web-based MST would provide this group with an attractive alternative to "traditional" MST. A web-based MST environment can provide athletes with a non-threatening and novel approach to learning and MST.

Web-based learning environments also support different learning styles and consequently attract individuals who may not enter into a more traditional learning environment. Some individuals do not like reading books or do not learn effectively

from static text. Others are unable to learn effectively from listening to presentations or lectures. By engaging in web-based MST, athletes are able to learn by reading, listening, watching, and interacting with the material and other users. The choice is theirs, they can choose to engage in the learning activities that suit their learning preferences. For example, athletes could have the option of reading information about a particular MST technique, listening to an audio clip of someone presenting this information, watching a video segment of two athletes discussing the use of the technique, and then using that technique themselves. They can communicate with other athletes about their MST experiences and discuss how they have used and adapted techniques to meet their needs. Interactive exercises and games can also provide athletes with an enjoyable way to develop mental skills.

The web also allows MST consultants to work with a larger number of athletes. During one hour, a MST consultant can consult with one athlete in a face-to-face individualised consulting session, 20 to 30 athletes in a group seminar, but over the web, there is no limit to the number of athletes that can log on at any one time to engage in certain aspects of MST. Increasing the number of athletes involved in MST could have a profound impact on the quality of sport experiences and the psychological and physical well-being of the population in general. As MST consultants, our goal is to help athletes of all abilities, young and old, develop mental skills which facilitate performance enhancement as well as enjoyment and satisfaction of sport (Bull, 1991; Cox, 1994). In a web-based MST environment, these goals should remain the same. Fostering enjoyment through MST will increase the likelihood that athletes remain involved in sport and physical

activity and have positive sport experiences (Battista, 1990; Frederick, Morrison, & Manning, 1996; Scanlan & Simons, 1992; Stodel, 2000; Weiss & Chaumeton, 1992). When one considers the psychological and physical benefits associated with sport and physical activity, the importance of achieving these goals becomes paramount.

Access to MST Resources
Not only does the web allow more athletes to gain access to MST services, but it also acts as a vast and dynamic resource centre. Indeed, the web provides learners with access to otherwise unattainable resources. Through the web, athletes are afforded immediate access to an unlimited number of MST resources from all over the world. Khan (1997) argued that this "rapid access to resources can promote higher levels of . . . involvement and motivation" (p. 12). These resources can come in the form of text, graphics, animation, audio- and video-clips, hypermedia, and human interactions.

Athletes are able to obtain an enormous amount of information about MST ranging from researched theory to practical application. For example, they can learn about what MST is, the theories behind MST techniques, how to employ MST strategies, and how to create their own individualised MST program. Aside from gaining access to a vast archive of information, athletes are able to engage in a number of interactive MST exercises, listen to audio-clips, and watch videos to facilitate the development of their mental skills. A variety of evaluation and feedback sheets which athletes can tailor to meet their needs will allow them to assess and monitor their progress.

Unlike CD-ROMS and books, resources on the web are easy to update and therefore a store of information can exist which grows

over time. Consequently, a large data base of sport-specific examples and feedback sheets, MST strategies, interactive exercises, and information can be created, adapted, and developed. Interviews, guest lectures, and discussions can be saved in audio, visual, or text format and revisited at any time. Moreover, the latest research and literature in the field of sport psychology can be presented, allowing athletes, coaches, and MST consultants alike to keep up with MST advances.

In addition to providing athletes with diverse MST materials, the web enables athletes to communicate with other athletes, coaches, and MST consultants from around the world. Experiences, mental challenges, expertise, problems, and solutions can be shared with individuals from diverse sports and with different abilities and sporting backgrounds. Relationships can be developed with individuals from different countries or different regions within their own country. In this way, athletes are provided with an international, global experience without the cost of travelling abroad (Bailey & Cotlar, 1994). This broadens the learning experience by allowing athletes to develop an understanding of other cultures and develop cross-cultural interpersonal skills. Through this experience, athletes with different cultural backgrounds are able to explore, experience, and better understand each other. They are also able to gain insight into how other cultures approach MST.

Within a web-based MST environment, athletes can consult with MST consultants and receive individualised expert advice and guidance. An advantage of web-based MST is that contact between the MST consultant and athlete is ongoing. Communication can be sustained over a long period of time and is not confined to the time boundaries of a

consulting session. Again, this supports the provision of long-term MST services.

Athletes can also benefit from experiential learning on the web (Polyson, Saltzberg, & Godwin-Jones, 1996). Virtual situations and places can be created and then visited so athletes are able to experience places that they have never been to. Competition sites can be actualised on the web thereby allowing athletes to become familiar with the environment prior to their competition. This may be helpful in preparing athletes for competition whether they be future Olympians or recreational golfers playing a new course. Familiarity with courses and sites of upcoming competitions can be fostered which will allow athletes to develop detailed competition plans and engage in situation-specific imagery.

The web allows us to create a virtual training centre. Athletes can access other services directly from the MST environment. Links to National Sporting Organisation or club web-sites allows athletes to gain information about upcoming competitions, results, rankings, and other events. Athletes can also link to sites that provide information in other sport science fields (e.g., nutrition, strength training). Indeed, athletes can buy their equipment and athletic clothing online and gain access to bookstores and publishers where they can read online book reviews and make purchases.

In effect, the web enables athletes to communicate with individuals they would not normally come into contact with, provides access to otherwise unattainable resources, and supports the creation of virtual realities. This adds a depth and richness to the learning experience that would not otherwise exist.

Interactivity

The transformation of the Internet from a text-based communications medium to a multi-media phenomenon, has expanded the possibilities for fostering interactivity. In this section, the types of interactions the web can support will be presented and the importance of designing web-based MST environments which maximise opportunities for interaction will be highlighted.

Types of Interaction

The web can support two different types of interaction: interactions between the users and the learning material and interactions between and among the users. In a web-based MST environment, athletes are able to interact with the material that is on the web and therefore intentionally navigate their way through the material. In this way, they are able to access the resources that will help them achieve their goals and meet their needs. By stopping, rewinding, and fast-forwarding video- and audio-clips athletes have opportunities to reflect and process information. Engaging in practical exercises, planning and problem solving directly on the web allows athletes to receive immediate feedback on their progress. Opportunities for online journaling, completing online mental skills assessment forms, and creating performance profiles allow data to be stored and used to track athletes' mental skill development.

Not only can interactions occur between the user and the material, but also among the users. Athletes, coaches, MST consultants, and other experts are able to communicate and collaborate with each other. Interactions can be public or individualised and personal. They can be synchronous or asynchronous. Synchronous interactions take place in real-time, all users are online at the same time although not necessarily in the same location. The time for reflection during the process is minimal, but the feedback and information are immediate and spontaneity is promoted (Berge, 1999; Welsh, 1997). Synchronous interactions can be supported by the following components: chat rooms, audio-conferencing, application sharing/ whiteboarding, and video-conferencing (see Table1). Conversely, asynchronous interactions do not require users to be online simultaneously. The users can respond to messages and participate in discussions at their own convenience with no need to coordinate time schedules. In asynchronous interactions there is more time to assimilate and reflect on the information and there is no immediate pressure to respond (Berge, 1998, 1999). Asynchronous interactions can be supported by the following components: E-mail, listservs, and threaded discussions.

Using these communication tools, virtual communities can be created on the web. A virtual community is a community which is not constrained by physical boundaries (McLellan, 1997). Rheingold (1993) described virtual communities as "social aggregations that emerge from the [web] when enough people carry on . . . public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (p. 9). The members of virtual communities are able to "engage in a wide range of discussion topics with their peers and leading authorities in the field" (Khan, 1997, p. 18). By creating a virtual MST community, athletes are able to interact with each other and benefit from multiple perspectives. They are able to engage in intellectual discourse, exchange knowledge, share experiences, share mental challenges, brainstorm for solutions, share emotional support, meet new people, and make new friends.

Table 1
Examples of Computer-Mediated Communication Tools (adapted from Driscoll, 1998)

Communication type	Description
Synchronous	
Chat rooms	Chat rooms support real-time text-based conferencing between two or more users.
Audio-conferencing	Real-time audio allows users to conduct a voice-based conversation over the Internet. It is often used in combination with visuals to enable users to talk to teach other while sharing graphics, images, videos, and animation related to the topic.
Application sharing/ Whiteboarding	Application sharing allows users to work collaboratively on a software application. It is frequently done in combination with other synchronous interactions such as text chat and real-time audio.
Video-conferencing	Video-conferencing involves the transmission of audio and video images to multiple users via the Internet.
Asynchronous	
E-mail	Electronic mail enables users to send and receive text-based messages over the Internet.
Listserv	A listserv is a software product that manages E-mail among a group of people. The user sends a message addressed to the list and the server forwards that message to all the list members.
Threaded discussion	In a threaded discussion, one user posts a message to open up a topic for discussion. This is called a thread. Other users can then respond to that thread or start a new thread of their own. Threaded discussions are unlike E-mail and listservs in that they require the user to log on to the discussion, messages are not delivered directly to their account.

The ways in which a virtual MST community may benefit athletes are diverse. Specifically, a virtual community could be used as a tool for team building. Carron and Dennis (1998) suggested that by providing athletes with opportunities for interaction and communication the development of team cohesion can be speeded up. This is important as Orlick (2000) stated that team harmony is " a worthy goal not only because of the way it makes you and other people feel, but also because it leads to improved

performance for all team members" (p. 203). By creating a virtual team community on the web, team members who may be separated by distance and do not have the opportunity to train together, as is the case with many National team athletes, are provided with the chance to get to know each other, develop friendships, create a support system for training, and experience feelings of closeness and connectedness.

Combinations of synchronous and asynchronous communication tools allow athletes to "attend" guest lectures and engage in question and answer sessions regardless of when and where the presentation is delivered. Moreover, panel discussions can be organised. For example, using audio clips, video-conferencing, or a simple text-based position statement, a group of expert MST consultants, coaches, and athletes could address a specific topic. Topics might include the relative merits and pitfalls of using internal versus external imagery for achieving different objectives, the different uses of self-talk, or the effects of music on athletic performance. Once the experts had presented their views, athletes could direct questions specifically to one or more of the panel members through the use of a threaded discussion. In this way, the discussion could progress for weeks or months. Discussions such as these grow quickly, ideas expand exponentially, new concepts are explored, and a greater depth is added to the learning experience. Interactions of these types are great stimuli for thought and learning.

Importance of Interactions
Interactivity is one feature of web-based learning that attracts educators. Unfortunately, all too often, teachers attempt to transpose what they do in their classrooms onto the web without redesigning it and

taking advantage of the extant advances in technology. This often results in the creation of a passive learning environment where the extent of the interactivity is limited to turning pages of text-based page information and linking to other sites. Consequently, it is important that opportunities for interaction are created when designing web-based MST environments (Farres & Stodel, 2002). Interactions are important because they enable active learner participation in the instructional/training/performance improve-ment process. They allow learners to tailor learning experiences to meet their specific needs or abilities. Interactions enable clarification and transfer of new ideas to already held concept frameworks. Inter-actions promote intrinsic motivation on the part of the learner by highlighting the relevancy that new information may have under specific circumstances.(Wagner,1997, p. 21-22)

Designing interactive web-based MST environments encourages athletes to become actively involved in the learning process. By participating in, and interacting with, the environment they are able to construct knowledge which is meaningful to them. This approach aligns with the constructivist philosophy of learning and is in contrast to traditional teaching approaches where learners take on a more passive role. By providing opportunities for reflection, communication, collaboration, negotiation, and problem-based thinking in web-based MST, athletes can process information and construct knowledge in meaningful ways so they are able to find and apply it when needed, thereby increasing the acquisition and application of mental skills and methods. Indeed, the constructivist approach seems to be the favoured approach for web-based learning (Hill, 1997; Jonassen, 1994; Jonassen, Peck, & Wilson, 1999; Relan & Gillani, 1997).

Not only is interactivity a prerequisite for active learning, but it also allows learners to direct their own learning experience. In a web-based learning environment there is no predetermined direction that the learners must follow (Polyson et al., 1996). Consequently, by delivering MST on the web, an athlete-centred approach to MST can be supported. Athletes can navigate their way through the MST at their own speed so they can acquire knowledge and develop skills at their own pace. They can set their own learning goals, choose the material they wish to learn, the skills they wish to develop, the time they want to engage in this learning, the type and amount of feedback they desire, and the media format with which they wish to learn (e.g., text, chat, audio, visual, animation). This will allow the athletes to perceive that they are engaged in MST designed specifically for them. In short, in web-based MST the athlete influences what is learned, how it is learned, and when it is learned (Khan, 1997).

Interactions also allow athletes to obtain feedback on their mental skill development. By engaging in interactive exercises, online assessments of their skills, and keeping an online journal, they can monitor and evaluate the progress of their skill development. Through online consultations they can also obtain feedback on their progress from expert MST consultants. Discussion and collaboration with other athletes also provides them with further opportunities to obtain feedback on their learning.

Not only can this feedback be a source of motivation for learning (Berge, 1998; Fischman & Oxendine, 1998), but interactions themselves can increase a learner's motivation to learn (Khan, 1997; Wagner, 1997). Interactions allow learners to become engaged in the learning process.

Moreover, meeting new people and being able to discuss experiences can also provide encouragement for learning.

To conclude, by allowing athletes to interact with the material on the web as well as with other users, the athletes are more likely to have a quality MST experience. Interactions encourage active learning, allow the athlete to direct their MST experience, maximise opportunities for feedback, and increase motivation to learn and acquire new skills.

Future Directions

The capabilities of the web to support interactivity and make MST services and resources easily accessible to a wide range of athletes make it an attractive and viable option for delivering MST. However, as of yet, no one in the field of sport psychology has taken full advantage of what the web has to offer and created fully interactive web-based MST which will maximise the acquisition and application of mental skills and MST techniques over an extended period of time. Given the appeal of web-based MST, we need to consider what is preventing MST specialists from developing such sites and how we can encourage and support such development.

There is no doubt that developing such an environment is a complex endeavour that will require time, money, and technical expertise. The development of partnerships with technical experts, universities, and private-industry may be viable means through which to address these issues. Moreover, as with all forms of MST, careful consideration needs to be given to the ethical standards outlined by governing bodies such as the Association for the Advancement of Applied Sport Psychology and the American Psychological Association. Issues of professionalism, quality control, confidentiality, and general

athlete care need to be considered. These barriers are not insurmountable. Why not embrace this vision and place the field of sport psychology and mental skills training on the cutting edge?

Farres and Stodel (2002) presented a comprehensive framework to guide the design of effective web-based MST environments. The framework was grounded in theories of web-based learning and sport psychology and highlights the importance of considering consulting philosophy, professional development, use of technology, consulting strategies, professional ethics, athletes' needs, and type and degree of interactivity when developing web-based MST. Farres and Stodel's framework represents only the first step towards systematic exploration of the web-based MST concept. Further research and educational implications need to be conducted in this area to guide our understanding. For example, the effective-

ness of web-based MST in facilitating the development of mental skills and the acquisition and application of MST methods and techniques needs to be examined. Program outcomes with respect to enhancing performance as well as cognitive, affective, and behavioural performance correlates (e.g., enjoyment, motivation, confidence) also need to be assessed. Of equal importance is the consideration of the athletes' experiences with web-based MST.

In 1998, Nideffer and Sagal stated that the use of multi-media in MST is "clearly just the beginning" (p. 313). The number of possibilities the web now affords MST and the field of sport psychology is boundless. They are limited only by one's imagination and the current conception of what MST is and how it should be offered. We need to begin by challenging our conceptions and opening our imaginations.

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