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Comparing the Practices of US Golf Against a Global Model for Integrated Development of Mass and High Performance Sport

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This study examines the state of golf in the USA against an ideal-type model for developing high performance sport integrated with mass participation. A questionnaire was developed for the following models' elements: talent development; advanced athlete support; training centers; competitions; intellectual services; partnerships with supporting agencies; and, balanced and integrated funding and structures of mass and elite sport. Twelve international experts including executives from sport governing bodies, golf coaches, academicians, and administrators validated survey questions. To determine the areas for improvement, 102 coaches completed the questionnaire. Possible advancements were further identified through semi-structured discussions with 15 golf administrators. The study identified exemplary practices, which can be utilized across the country, to provide more affordable facilities and coaching for all, and help reverse negative 30-year trends in performances of US golfers as well as mass golf participation.

Introduction

The United States (US) is the most successful country in international golf events, such as Ryder Cup and the Presidents Cup for men, and Solheim Cup for women. In men's major championships during 1895-2017, US players have won 59 of 80 Masters, 83 of 118 US Open Championships, 40 of 144 British Open Championships, and 82 of 97 PGA Championships. However, the US became less dominant recently. During 2007-2016, the US has only won five of the last 10 Masters and US Open Championships, three of the last 10 British Open Championships, and four of the last 10 PGA Championships (Topendsports, 2017).

US women have not been as successful as US men in the major golf championships, and their trend of decreasing performance relative to other countries is similar. During 2008-2017, US women have won four of the last 10 US Open Championships, two of the last 10 KPMG Championships, one of the last 10 British Open Championships, and five of the last 10 ANA Inspirational Championships. Additionally, they have yet to win an Evian Major Championship (LPGA, 2017).

US men's and women's golf is less successful currently compared to 20-30 years ago. Through the 1980's and 1990's, the US only lost three of the 20 US open championships, compared to 10 of 20 between 1997-2016. Between the 1970's and 1980's, the US captured 13 of the 20 British Open championships compared to 11 of 20 between 1997 and 2016 (Topendsports, 2017).

Golf has been part of the summer Olympics three times in modern Olympic history. In those appearances, the US team was dominant, winning 11 total medals. However, in Rio 2016, when golf was reintroduced into the Olympics after an absence of 112 years, the US won a bronze medal in men's individual, but did not medal in the women's individual (Olympic, 2017).

While competitive golf has been growing in the US, the sport's mass participation has decreased in the past 30 years (NSGA, 2016). When it comes to children age 6-to-12 who play an individual sport (i.e., golf), participation decreased from 53.2% in 2011 to 49.8% in 2016 (Project Play, 2017). The number of core participants in this age group increased by 200,000 from 2008 to 2016 and by 100,000 from 2015 to 2016. However, the percentage of golf participants has held steady.

The United States Golf Association (USGA), has grown over the past 30 years (USGA, 2014). The US Open had record 10,127 entries in 2014, and the Women's Open has also experienced a steady rise in entries over the past decade. The number of USGA members increased 3.7% from 675,000 members in 2015 to 700,000 members in 2016 (USGA, 2017a), but this is only 0.2% of the US population of 326 million. The number of participants serviced by Golf Handicap and Information Network (GHIN), a handicapping service provided by the USGA to participating associations and clubs allowing members to post scores, calculate handicaps, and retrieve handicap information online, increased from 2,013,161 in 2010 to only 2,254,339 in 2017 (USGA, 2017b), only 0.7% of the US population. Over the past 30 years, the total US population has increased, but recreational golf participation has not kept pace, reaching about 28 million golfers (only 8.6% of the US population) in 2002, compared with 29 million in 2016, or 9.6% of the US population playing golf at least once a year (Statistic Brain, 2016).

Golf is the 11th most popular sport worldwide. Mass public participation provides opportunities for further growth in the United States (Statistic Brain, 2015). According to SRI International Report (2011), the golf industry's overall economic impact of $176.8 billion supported 1.98 million jobs across the USA, including real estate, capital investment, retail, tournaments, golf-related travel, endorsements, and charities. After the economic recession from 2007 to 2009, the golf industry showed signs of shrinking. However, the US still has 15,372 golf courses, 45% of the world's total of 34,011. There are 11,581 public courses and 3,791 semi-private/ private courses in the US (ESPN, 2015). Golf is the 12th most participated sport in US high schools for both boys and girls with 221,405 players (NFHS, 2015). A key factor in the development of golf was courses built through

municipal governments funded by the Works Progress Administration, an agency of the New Deal period from 1935 to 1943 (Adams & Rooney, 1985). After this expansion, public courses outnumbered private ones.

The authors built the model of integrated elite and mass sport development from past research, forming the foundation for a questionnaire and interview schedule for US golf coaches and administrators, to generate a snapshot of perceptions of the current sport system and possibilities for its further development.

Theoretical Framework

The Smolianov and Zakus (2008) model emerged from an integration of instruments used to analyze and compare national elite sport systems (Baumann, 2002; De Bosscher et al., 2006; Digel, 2002; M. Green & Oakley, 2001). The model has been previously validated (Smolianov & Zakus, 2009), and shown to be a framework for program analysis that is not culturally bound. The model has helped to advance different African, American, and European sport systems, including the US (Smolianov, Zakus, et al., 2014), Russia (Smolianov, Bravo, et al., 2014), the Netherlands (de Zeeuw et al., 2016), Zambia (Smolianov & Musunsa, 2018), and Nigeria (Kaka'an et al., 2018), and can be used to advance any sports system in the world by determining their areas of improvement. It is accepted as a model for further understanding different sports including US rugby, tennis, and soccer (Smolianov, Zakus, et al., 2014), swimming (Smolianov et al., 2016), ice hockey (Schoen et al., 2016), volleyball (Hopkinson et al., 2018), and wrestling (Smolianov et al., 2020); Dutch swimming (de Zeeuw et al., 2017); Nigerian football (Kaka'an et al., 2018), as well as Russian swimming (Smolianov et al., 2016). As part of these studies, over 40 US and 20 international coaches critiqued and refined the model. The authors offer this newer version and supporting research data as a heuristic typology against which current and future systems, structures, and practices at the macro-, meso-, and micro-levels of delivery can be measured and compared. This new heuristic model differs in that it incorporates what is identified as "best practice" at each level of current and past sport development systems, including practices not emphasized previously such as affordable access to high quality coaching, facilities, and events at both mass and elite levels of participation, as well as training that rewards all participants based on multi-stage scientifically developed methodologies (Farrey, 2018; Fetisov, 2005; Matveev, 2008; Platonov, 2010).

This study's theoretical framework builds on the scholarship of Bravo, Orejan, Vélez, and López (2012); De Bosscher, et al. (2006); Digel (2005); Fetisov (2005); Platonov (2010); and Smolianov and Zakus (2008, 2009) who discussed the foundational role of broad sport participation leading to the development of elite athletic performances. A key idea in this process of developing participants from recreation to High Performance (HP) which consist of programs preparing athletes for national and international televised competitions, and involves macro-, meso-, and micro-levels of policy and

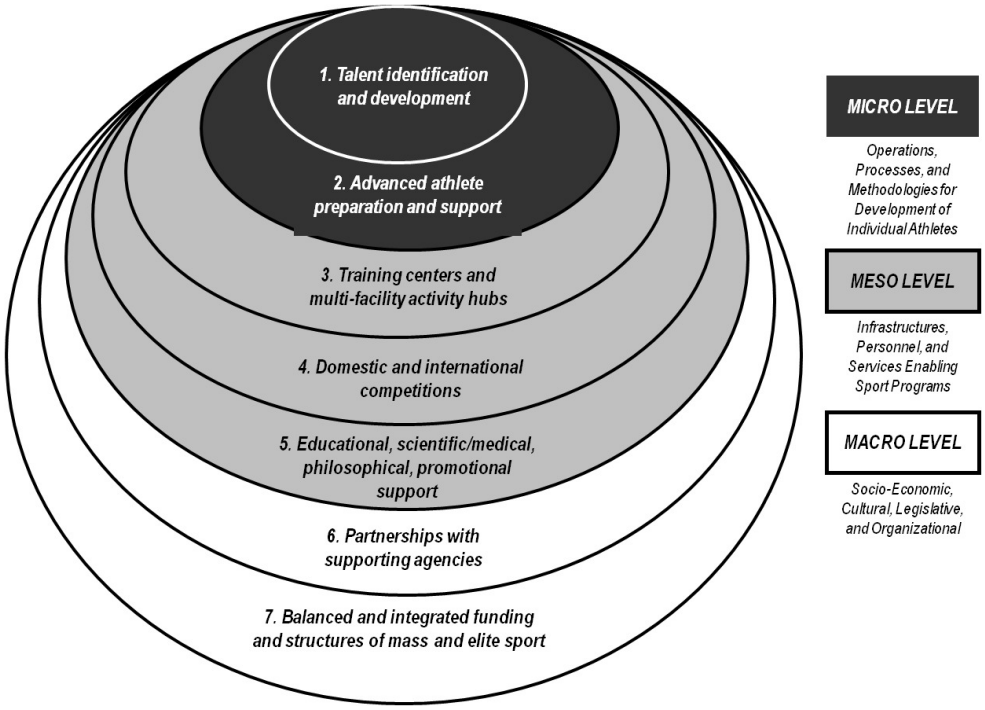


Figure 1. Ideal-type Model of Integrated High Performance and Mass Sport Development

support (see Figure 1), as adapted from Green & Houlihan (2005), De Bosscher et al. (2006), and De Bosscher, Shibli, Van Bottenburg, De Knop and Truyens (2010). Presently, macro-level elements refer to socio-economic, cultural, legislative, and organizational support for a national sport system by the whole society. The meso-level includes infrastructures, personnel, and services enabling delivery of sport policy. The micro-level consists of operations, processes, and methodologies for development of individual athletes. HP elements overlap at different levels (De Bosscher et al., 2006).

When HP and recreational sport (physical education [PE], recreation, and fitness programs) are connected, goals of supporting agencies, ranging from fitness to competitive success and commercial objectives, can be achieved (Fetisov, 2005; Smolianov & Zakus, 2008, 2009). The developed model suggests a globally applicable theory of how to advance HP sport and benefit mass participation. However, significant challenges face sport developers due to insufficient conceptual and practical frameworks, resulting in poorly functioning sport systems (B. C. Green, 2005).

Details of the model are based on the literature mentioned above as well more than 200 sources detailed by Smolianov et al. (2014) showing a wide range of interests in understanding sport development, particularly successful sport systems (Houlihan & Green, 2008; Oakley & Green, 2001; Riordan, 1991). Below is an essential explanation of the model.

The micro-level elements one and two in Figure 1 indicate that successful systems for most sports, including golf, try to identify talent and gradually develop participants into high performers. These follow hierarchical pools

of athletes who are rewarded financially and have increased access to more sophisticated and scientifically-based multidisciplinary performance, career, and lifestyle support.

Effective functioning of the micro-level requires element three, which includes easily accessible, high quality facilities, equipment, and coaching for each age and level of participation. In each community, golf could be part of a multi-sport hub where: sports share resources; travel takes little time between home, training and school; and maximum access to medicine and cultural venues. Another important condition for the micro-level is element four, sufficient well-organized competitions at all levels and the integration of commercial tournaments into a plan of amateur competitions gradually preparing athletes to achieve peak performance at major events. This element also implies that educational, scientific, medical, philosophical, and promotional support (element five) are available at each level of participation.

Provision of the meso-level services results from multiple partnerships (element six) that can obtain sufficient resources and exchange expertise to achieve common goals that influence both mass, elite sport environments, and society-at-large. Examples include mass media involvement and sponsorship arrangements. Policy may direct the type and nature of systemic organizations required for a holistic sport delivery system in these areas. For a cooperative long-term functioning of all these elements, funding and structures of mass and elite sport systems must be balanced and integrated (element seven), which relates more to legislative, ideological, and systemic governmental input.

Successful sport systems require macro-level societal support and a balance of funding for elite and mass sport from multiple sources. The following macro-level structures are particularly important:

- mass and HP programs and facilities developed in collaboration with government departments, the nation's Olympic Committee, National Governing Bodies (NGBs), and clubs;
- balanced power between the government on one side and NGBs, training centers, clubs, and communities on the other;
- PE and sport integrated at childcare facilities, schools, and universities;
- a system of sport clubs for each participation level with a dual goal of maximizing participation and developing excellence;
- progressive participant and coach rewards for fitness and elite performance;
- large numbers of dedicated, professional well-trained coaches at all levels and;

- subsidization of and incentives for recreational and elite sport ensuring diversity and availability for all.

If HP and recreational sports connect on the above points of development, they can reach goals of supporting agencies, mainly commercial objectives, positive levels of health and fitness, various elements of social capital, and community development. Success in major global competitions and national pride naturally accompany this. Therefore, there is a need to examine the practices of US golf organizations against a global model for integrated development of mass and high-performance sport.

To evaluate validity and reliability of the instrument, survey data of the different sports including US volleyball (Hopkinson et al., 2018), wrestling (Smolianov et al., 2020) and golf, detailed below, were analyzed in comparison using the Cronbach's alpha (α) statistic for each sport and element of the model. Items within an element were consistent as all the Cronbach's α values for the data across all sports and elements were larger than 0.7.

Method

Studies reviewed used either predominantly quantitative (e.g., De Bosscher et al., 2006) or qualitative (e.g., Houlihan & Green, 2008) approaches, some without a specific comparison frame (e.g., Platonov, 2010). In this study, both highly structured and open-ended qualitative analysis tools were used. This included a survey of golf coaches where open responses accompanied structured questions. After collection of the surveys, semi-structured discussions with administrators were conducted to add triangulation to the findings. Lastly, a content analysis of USGA's website and organizational documentation was conducted.

Previous theoretical framework and a comprehensive literature review were used for the development of a 54-item questionnaire. These statements were validated by 12 international experts, including academics who published on HP sport systems and on sport development and executives of sport governing bodies. The questionnaire was delivered online to 2,000 US golf coaches, and 102 surveys were fully completed for a response rate of five percent. The sample size and response rate were similar for the studies of US rugby, soccer, and tennis (Smolianov, Bravo, et al., 2014), swimming (Smolianov et al., 2016), ice hockey (Schoen et al., 2016) and volleyball (Hopkinson et al., 2018). While the sample does represent a cross section of golf coaches at every level, there could be a bias towards those interested in critically thinking about golf development. Having grassroots experience, most sampled coaches worked with competitive or elite golfers at high school and university levels, which ensured that the respondents were well informed about practices and dynamics of both the mass and elite systems of US golf.

Survey respondents represented twenty-four states of the country covering each of the four major areas in the US golf governance structure: Northeastern, Southeast, West and Central regions. While 20% of surveyed

Table 1. Estimates of Cronbach's Alpha Computed for Each Element of the Model Used in the Study

Element	Cronbach Alpha
1. Talent Search and Development	0.758
2. Advanced Athlete Support	0.847
3. Training Centers	0.859
4. Competition Systems	0.884
5. Intellectual Services	0.841
6. Partnerships with Supporting Agencies	0.787
7. Balanced and Integrated Funding and Structures of Mass and Elite Sport	0.883

golf professionals coached beginner/intermediate level athletes; 23% coached high school athletes; 31% coached collegiate athletes across all levels; nine percent coached masters or adult level athletes; and five percent coached elite level athletes. Sixty-five percent of respondents reported having a coaching certification. A relatively high proportion of the coaches reported having a bachelor's degree (64%), and 33% had a master's degree.

Of those who responded to the survey 92% classified themselves as white; four percent classified themselves as Native American/ Alaskan or American Indian and four percent as either Hispanic or Latino. On average, respondents were 46 years of age and had 22 years of coaching experience. Finally, 30% of respondents were female, 70% male.

Survey instructions asked respondents to think about current structures and systems of golf in the US and to indicate how often the elements and practices were evident, from "never" (1) to "always" (5), on a five-point Likert Scale.

Survey responses are presented in Tables 2 thru 8 as both average scores and aggregated percentages of perceived current practices. Aggregated percentages of responses allow appreciation of the distribution of coach responses. Cronbach's α statistic was used to assess the internal consistency of the items used within each element of the model. Cronbach's α is a well-known and well documented (Meyers et al., 2013; Schmitt, 1996; Winand et al., 2010) measure of internal consistency of a set of scale items (i.e., the degree to which the items all point in the same direction). The value of Cronbach's α was consistently reported between 0 and 1, with values toward one indicating more strongly consistent items. Using this statistic to evaluate sport governing organizations, Winand et al. (2010) suggested interpreting Cronbach's α values above 0.4 as "slightly consistent" and those above 0.7 as "consistent." Table 1 illustrates the Cronbach's α values for each of the seven elements. The values indicate consistency in each element.

To address concerns by Henry, Dowling, Ko and Brown (2020) about lack of qualitative analysis of such accepted variable-oriented approaches to similar studies as the SPLISS method (De Bosscher et al., 2010), surveyed coaches were asked to elaborate on their responses through open written comments, and later semi-structured interviews conducted as personal, telephone, and

e-mail conversations with thirteen regional administrators were conducted to share the coach survey results and gather further information regarding the challenges and advancement of US golf. The interviews were based on the seven elements of the model. Inductive coding techniques followed by researcher discussions led to refinement of themes. The open-ended survey comments were quantified and reported when instrumental in percentages to specify and prioritize the areas for improvement, while discussions with administrators informed with survey results focused on revealing and reporting indicative and innovative practices informative and implementable nationally for benefits of both elite and mass participants. The above qualitative techniques together with the analysis of published and organizational documents on the identified areas of potential improvement helped this study to overcome an inherent danger of the variable-oriented approach applying a 'one-size-fits-all' framework across all nations and sports, and assuming similarities of cases and overlooking fundamental differences that may exist within sporting systems (Henry et al., 2020). This study investigates US golf as unique complex system and uses the globally desired practices or survey variables as starting points for deeper and broader qualitative analysis, hoping to bring this approach closer to the product of mixed method inquiry called for by Henry, Dowling, Ko and Brown (2020).

Results and Discussion

Survey responses are presented as both average scores and aggregated percentages of perceived current practices. Aggregated percentages of responses allow appreciation of the distribution of coach responses.

Element 1: Talent Search and Development

As can be seen from Table 2, opinions were quite divided: 40% of respondents had overall negative perceptions about this element and 20% were positive. Eight out of ten items in this element (practices one, two, three, and six through ten) had more negative than positive perceptions revealing a shortage of well-educated and paid coaches who are able to attract and nurture golf talent on mass scale. A significant challenge within the US golf system relates to coach competence with 59% of respondents indicating that coach expertise is never or rarely high across all participant ages and levels—an important acknowledgement of the coaches' own lack of experience.

From 68 open responses on this element, 43% were related to expense issues, 37% to exposure issues, and 20% to opportunities. Detailed by Coach 88 (January 20, 2017): "Most high quality instruction is done in the big cities... and rural areas are overlooked... It is also too expensive for a lot of players. There should be a universal pyramid (like tennis has) so players know what the next step is. Many parents do not play and have no idea how to get their child involved or what to do next." Those that do get involved need to be retained, Coach 12 (January 6, 2016) stated: "Many facilities perform well with younger age kids and then training declines as the kids become older and more skillful."

Table 2. Talent Search and Development

Desired Practices	Average Score	Distribution of Responses		
		Negative Perceptions* (%)	Neutral Perceptions* (%)	Positive Perceptions* (%)
1. In addition to children being introduced to golf by themselves and parents, potential athletes are attracted from outside the sport's participation base (e.g., by a search at schools).	2.6	39	47	14
2. Young golfers are trained based on guidelines for multiple development stages recommended by USA Golf (many national governing bodies have guidelines for nurturing players from the introduction to sport through the achievement of peak performance on to retirement from sport)	2.5	51	32	17
3. Sufficient resources are available collectively from various supporting organizations for all young talented golfers to progress through all developmental stages.	2.6	49	33	19
4. A multi-stage system of athlete qualification based on results/ranking within age groups is used to reward a golfer's progress from beginner to top international level.	3.2	21	39	40
5. Performance of golfers in each competitive age group is monitored and developed using a national database.	3.2	21	44	36
6. A high number of full-time golf coaches are available making the athlete-coach ratio low.	2.7	38	49	13
7. Golf coach expertise is equally high across all participant ages and levels.	2.5	59	26	15
8. Golf coaches are paid according to multi-level certification based on coaches' education and achievements of entrusted players.	2.3	54	33	13
9. Golfers with potential to represent the country (e.g. nation's top 100 golfers per age group) are offered the conditions to train full time with high performance standards.	2.6	34	53	13
10. Golf training is well integrated with school/college/ university education for harmonious development of athletes.	2.8	36	41	23
Across all items in element (N=102)	2.7	40	40	20

*Note. Possible scores on questions range from 1 to 5. Negative Perceptions is an aggregation of '1 = never' and '2 = rarely' responses. Neutral Perceptions is an aggregation of '3 = sometimes' and 'Do not know' responses. Positive Perceptions is an aggregation of '4 = often' and '5 = always' responses.

Significant concerns arose in interviews with administrators regarding the ability to pay coaches' full-time salaries. In particular, Administrator E (January 15, 2017) noted: "There is little-to-no golf exposure in the public school setting. When you look at private schools however, there is a huge presence of golf in their school community. This is another gap regarding financial situations and the sport of golf. For some school and after school/ recreation golf programs, the coaches are not always full-time coaches. A lot of the coaches are volunteers who love the sport or who have played a few years." The other issue was that, as Administrator A (January 17, 2017) summarized: "There is not much of a developmental program in the United States. It has been left up to the private sector. Typically, the LPGA and PGA professionals are the grassroots organizations behind developing golfers into elite players." Coach 14 (January 14, 2016) also backed this common notion saying that there should be a national development program for promising young athletes.

Table 3. Advanced Athlete Support

Desired Practices	Average Score	Distribution of Responses		
		Negative Perceptions* (%)	Neutral Perceptions* (%)	Positive Perceptions* (%)
1. Athletes, including golfers, are supported at places of work similar to those at Hilton and US Army paid time given to train and compete.	2.1	57	38	5
2. High performance golfers are ranked into hierarchical levels/pools with appropriate financial and technical support.	2.4	44	46	10
3. Athletes are assisted with formal education and career outside sport	2.5	40	43	16
4. Athlete support is well shared/balanced between coaches and advisors (e.g., coach may provide psychological, nutritional and performance science support, while independent advisors may best assist with medicine, career, education and personal finances)	2.9	25	55	20
5. Scientific research (e.g., biomechanics of athlete movement and psychophysiological analysis) is applied quickly and effectively to immediately benefit a golfer's performance.	2.8	29	52	18
6. A golfing career is prolonged by medical personnel knowledgeable in golfing (helping with such things as injury prevention, adjustment of training levels, nutrition, pharmacology, rest and stimulation therapy, doping use prevention).	3.2	16	52	32
7. Doping is controlled by USA Golf and is based on the most recent guidelines from the World Anti-Doping Agency.	3.4	10	57	34
8. Athletes leaving elite sport are provided with individualized lifestyle plans for physical and psychological health	2.5	35	53	11
Across all items in element (N=102)	2.7	32	50	18

*Note. Possible scores on questions range from 1 to 5. Negative Perceptions is an aggregation of '1 = never' and '2 = rarely' responses. Neutral Perceptions is an aggregation of '3 = sometimes' and 'Do not know' responses. Positive Perceptions is an aggregation of '4 = often' and '5 = always' responses.

If practices of school education, like in Finland, as well as coach education and governmental sport funding in such countries as Australia, Canada, China, UK, and Russia, are better communicated to the public by USGA, support of coaching education and remuneration could be more efficient in achieving performance, health, and education objectives important in the US (Ridpath, 2018; Smolianov, Zakus, et al., 2014).

Element 2: Advanced Athlete Support

While Table 3 shows that there were more negative (32%) than positive (18%) responses overall, the statements in this element received highly polarized ratings. Items six and seven indicated successful medical and doping control practices in elite golfers. Practices one, two, and three received the most negative responses in this element reflecting lack of educational and career support according to systematic ranking into hierarchical levels/pools. Commenting on these items, Administrator J (January 29, 2016) said: "These training benefits would need to be viable for the new player or lesser skilled to be sure all athletes would have the same levels of assistance."

Almost half (47%) of the 39 coaches who provided open responses on element two agreed that more support is needed through funding and personnel. Coach 12 (January 6, 2016) said: "Again, there is no continuity or agreement on how to train elite golfers." Also in response to this Administrator H (January 18, 2017) added: "Golf and any sport will never be successful if a team does not have the proper tools and knowledge. Nutrition and injury prevention is not something that athletes automatically understand especially if they are children. Besides the rules of the game, this is the most vital part of a golf organization." The intensifying demands of elite sport segregate top-class performers according to their socio-economic status, and the lower classes fail (Ulrich, 1976), particularly in the US where funds for healthy sport development lack. Smolianov et al. (2014); Reid et al. (2007); and De Bosscher, De Knop, and Heyndels (2003) agree that we could learn from many countries, particularly small successful sport nations, to allocate resources more effectively to personalized support of sport participants. In the US, a more efficient and fairer sport system, which fully benefits national health, can be developed through greater, more transparent, and more accountable allocation of moneys, including continuous public and private support, grants and tax deductions (Smolianov, Bravo, et al., 2014).

Element 3: Training Centers

Table 4 shows that more respondents (41%) were negative than positive (15%) for this element. Element 3 had one of the lowest rated practices, statement three, which relates to training centers' affordability, with 66% of negative responses. This is not a problem for elite athletes, who according statement one, are provided with priority access to high-quality equipment and facilities. Coach 85 (January 11, 2016) explained: "There is access to all of these facilities, but the means to get to and pay for the facilities depends largely on socioeconomic status." Coach 99 (January 26, 2016) agreed: "Many programs are very expensive and difficult to gain access to unless you have the monetary resources or in some instances, an advanced golf game to have discounted access based on the good nature of a teaching professional who may give you lessons if he/she believes in you." Item seven had only 21% of positive responses, indicating that golf training centers are located too far from other sport facilities. Administrator I (January 6, 2016) noted that training centers are located near golf courses but not necessarily other sport facilities so not many athletes can see others perform different sports.

Administrator A (January 19, 2017) agreed stating: "However, these facilities are not affordable to everyone, and the model of these top level facilities is not emulated at government-sponsored facilities." After studying how multi-sport schools in Russia (Bravo & Smolianov, 2016) and IMG Academy integrate facilities and services in many sports, the USGA could help Community Olympic Development Programs connect clubs, schools, universities, community centers, and commercial partners for further advancement of mass and elite golf. IMG programs are available for

Table 4. Training Centers

Desired Practices	Average Score	Distribution of Responses		
		Negative Perceptions* (%)	Neutral Perceptions* (%)	Positive Perceptions* (%)
1. High performance athletes are provided with priority access to specific high quality equipment and facilities	*3.2*	23	36	41
2. Training centers provide specialized facilities and equipment for each age and level of participation	2.9	28	52	19
3. All national, regional and local training centers are available to athletes at affordable costs	2.3	66	25	9
4. Travel from home to training facilities takes little time for US golfers of all levels and types	2.8	33	52	15
5. Training facilities are close to all facilities for athlete support (e.g., school/college, medical, room & board, leisure/ entertainment)	2.8	26	67	7
6. A network of training centers is used to prepare US golfers in different environments/sociogeoclimates (e.g., high altitude/temperature/humidity, city/pollution, rural/ resort)	2.2	54	38	7
7. Golfing training centers are located close to other sport facilities so that players participate in and learn from other sports	2.2	57	37	6
Across all items in element (N=102)	2.6	41	44	15

*Note. Possible scores on questions range from 1 to 5. Negative Perceptions is an aggregation of '1 = never' and '2 = rarely' responses. Neutral Perceptions is an aggregation of '3 = sometimes' and 'Do not know' responses. Positive Perceptions is an aggregation of '4 = often' and '5 = always' responses.

preschoolers all the way up to post graduates and have coaches who have completed the most rigorous certification programs and possess years of experience coaching golfers of all skill levels.

There are some examples of programs to assist in increasing access and affordability for mass participation in golf and these efforts should be expanded. This is critical in developing the game of golf, sustaining it as a recreation and competitive industry along with identifying potential elite competitors. Golf 2.0 is specifically designed for PGA and LPGA club professionals as to how they can build their business and enhance their marketing at individual courses/clubs. The main goal is to make the game more fun and welcoming to millions of new golfers and not just focus on the avid golfers, by growing their business through attracting a larger consumer base regardless of income (Golf 2.0, 2020). Several other programs exist that aim to make golf team and individual play accessible to all children regardless of personal socio-economic circumstance (PGA Jr. League, 2020). Some of the more notable programs are the PGA Jr. League, Get Golf Ready, and Play Golf America. All four of these programs are geared toward access and opportunity. Specifically Get Golf Ready is geared around beginner lessons and golf etiquette to expose kids to the game and create interest (Get Golf Ready, 2020), while Play Golf America is more of a golf club management focused effort to introduce all people regardless of age or ability to the game of golf (Club Management Association of America, 2020). All of these programs increase access by low cost or even free lessons. Programs like these

present opportunity to overcome limitations by zip code and potentially lead to greater identification and development of potential elite players and club professionals.

Fostering public programs at underutilized public parks and sport and recreation facilities also has great potential for more effective and efficient use of tax and donation dollars. Pennington (2009) described practices that could be used across the country. In 2008 the New York City (NYC) Parks Foundation opened its Junior Golf Center on what had been abandoned land. Use of the center, including its equipment, comprehensive training and pedagogical programs, was free for children and accompanying adults. The funding model for the $8-million center included resources and sponsorships from Callaway Golf, Top-Flite, and the USGA. About 1,500 children signed up for free training in the first year and enrollment has grown (Pennington, 2009).

Another junior golf initiative is the First Tee program, created by the World Golf Foundation in 1997 with several corporate and golf industry partners. It introduced the sport to 2.9 million children and teenagers nationwide, with First Tee programs being implemented in more than 2,800 elementary schools (Pennington, 2011). The First Tee of Metropolitan New York was created in 2001 as a joint venture between the Metropolitan Golf Association Foundation and the Metropolitan Section of the PGA. It provided affordable and accessible facilities to young players at several sites. Interpersonal skills, career guidance, goal setting, and learning to appreciate diversity are also taught alongside the sport of golf (Pennington, 2011). The above programs highlight examples of how to best connect mass and elite sport in a market-driven society. They exhibit how governments and private sector can blend purpose. Administrator B (February 10, 2016) suggested creating sporting centers that offer golf as well as other popular sports, as done by IMG Academy (2017) and financed for all in NYC (Pennington, 2009, 2011). The USGA should communicate and coordinate these successful practices across the country. Teaching golf managers to partner for common purposes and finance their business development is important as more than half of the 27 open responses regarding facilities pertained to funding problems. Better cooperation is also the key to success, given the number and spread of golf facilities across geoclimatic zones of the United States, as reflected by items six and seven in Table 4 (55% and 57% of negative perceptions, respectively).

Element 4: Competition Systems

Element four yielded better results: 23% positive, 26% negative, and 51% neutral. The main concerns of coaches in this element were USGA assisting in local and developmental events (35% negative) and using event sponsorship incomes to develop competitions for all participation levels (28% negative). A low score (30% negative) was on coordinating events for all ages, levels, and organizations. Coach 102 (February 6, 2016) was quite critical: "There are so many tournament and competition opportunities that they are disorganized and not always well communicated to attract participation..." Administrator

Table 5. Competition Systems

Desired Practices	Average Score	Distribution of Responses		
		Negative Perceptions* (%)	Neutral Perceptions* (%)	Positive Perceptions* (%)
1. Hosted international events and international opportunities are sufficient for all athletes with potential to represent the country	3.0	20	58	22
2. Competitions are well structured at all levels (e.g., club/ training center, regional, and national)	3.1	19	48	33
3. USA Golf and its support mechanisms sufficiently assist in local and developmental events	2.7	35	49	15
4. USA Golf attempts to integrate professional and amateur tournaments into a progressive plan of competitions gradually preparing athletes for peak performance at "Majors" (i.e., World Cups and Championships, Paralympic and Olympic Games, Masters)	3.0	23	49	28
5. USA Golf tries to coordinate all domestic and international competitions for all ages and levels, between and within all possible organizations.	2.9	30	42	28
6. Event sponsorship incomes are used to develop competitions for all participation levels	2.7	28	59	13
Across all items in element (N=102)	2.9	26	51	23

*Note. Possible scores on questions range from 1 to 5. Negative Perceptions is an aggregation of '1 = never' and '2 = rarely' responses. Neutral Perceptions is an aggregation of '3 = sometimes' and 'Do not know' responses. Positive Perceptions is an aggregation of '4 = often' and '5 = always' responses.

H (February 10, 2016) suggested: "I think in the more urban neighborhoods or any other that may not be able to afford golf there needs to be some type of golf workshop where people can learn about the sport of golf and try it out for free. This has the potential to open up many different worlds for some people and positively impact their life."

Item four responses were 23% negative. Coach 61 (February 9, 2016) stated: "There is no system provided by a governing body until you get to the elite level–there are some junior systems, but they are not coordinated and do not provide a specific progression (US Kids Golf, AJGA, Regional tournament organizations)." Administrator I (January 6, 2016) again returned to the participation costs: "The problem with the competitions in my opinion is the money. Often these events can be pretty expensive for the competitor. I know here in Illinois most of our entry fees are north of $100. To me that is an issue and its part of my goal as executive director to help raise money to lower those costs so that people in my region can afford to compete."

This element's statement with the highest neutral responses of 59% was 'Event sponsorship incomes are used to develop competitions for all participation levels', indicating that more than half of responded coaches do not know or are blasé about this practice. Instead of developing events for all, major tournaments support charities with questionable effects on mass participation and health in the US. For example, there is no prize money awarded at the Presidents Cup. The net proceeds are distributed to charities nominated by the players, captains, and captains' assistants. Over the past

Table 6. Intellectual Services

Desired Practices	Average Score	Distribution of Responses: Negative Perceptions* (%)	Neutral Perceptions* (%)	Positive Perceptions* (%)
1. All specialists engaged in the development of s golfers are well educated for their professional roles.	2.8	30	56	14
2. USA Golf fosters research on all-important aspects of golf development.	3.2	16	48	36
3. Principles of sportsman like conduct and Olympism are communicated well (e.g., through mass media, school education, and through the arts as part of golfing events).	3.2	21	34	45
4. Research results are well communicated to coaches (e.g., by research institutes, universities, USA Golf).	2.6	46	43	11
5. Communication by USA Golf contributes to national values and identity by inspiring participants to strive for excellence, to show the best results and character in the world.	3.0	24	56	21
6. USA Golf provides vision and leadership in improving all aspects of the participants' well-being through golf (e.g., physical, social, emotional, mental, spiritual, and environmental/ecological).	2.7	37	44	19
Across all items in element (N=102)	2.9	29	47	24

*Note. Possible scores on questions range from 1 to 5. Negative Perceptions is an aggregation of '1 = never' and '2 = rarely' responses. Neutral Perceptions is an aggregation of '3 = sometimes' and 'Do not know' responses. Positive Perceptions is an aggregation of '4 = often' and '5 = always' responses.

20 years, The Presidents Cup has impacted more than 450 charities in 15 countries worldwide and 35 states in the US (Presidents Cup, 2017), but has it done what it could do best, offer conditions for all to play golf?

Element 5: Intellectual Services

Element five yielded 24% positive, 29% negative, and 47% neutral perceptions. While 36% of respondents were positive and only 16% were negative about the USGA fostering research, 46% of respondents perceived that results are not well communicated to coaches (item four in Table 6). Coach 92 (January 21, 2016) summarized the element's open responses: "The USGA does a great job of communicating the values and importance of character and character associated with the game of golf... and researching so many aspects of the game (equipment, course and turf management, etc.) but... they do not do much to promote research or study the development of young golfers into elite level competitors. They do not believe that is their role."

Coach 81 (February 3, 2016) represented other coaches' responses: "The USGA communicates very little to me as a high school coach. Any information that we have gathered has come through our research." Coach 63 (February 8, 2016) agreed with the other coaches: "Player development pathways and research could be better developed and communicated from bodies like the USGA and PGA of America." Administrator D (January 30, 2016) expressed the common concern: "The USGA is focused on elite competition and upholding the qualities for the game of golf. To my knowledge there is little effort for communicating development."

Table 7. Partnerships with Supporting Agencies

Desired Practices	Average Score	Distribution of Responses		
		Negative Perceptions* (%)	Neutral Perceptions* (%)	Positive Perceptions* (%)
1. Support for golfing development is adequate from various levels of government.	2.2	58	33	9
2. Sufficient help is obtained from USA Golf and other national governing bodies of golfing that provide coach education and certification.	2.7	34	54	11
3. Role of clubs/community programs in golfing development is sound.	2.7	39	51	10
4. Golfing is well supported by educational sector (e.g., schools, colleges, universities).	2.9	29	47	24
5. Cooperation with agencies outside of sport industry (e.g., medical, scientific, military, philanthropic and sponsoring organizations, lotteries) is in place.	2.8	31	51	18
6. USA Golf influences media coverage and popularity of golf to increase support from the society.	3.2	12	57	32
Across all items in element (N=102)	2.8	34	49	17

*Note. Possible scores on questions range from 1 to 5. Negative Perceptions is an aggregation of '1 = never' and '2 = rarely' responses. Neutral Perceptions is an aggregation of '3 = sometimes' and 'Do not know' responses. Positive Perceptions is an aggregation of '4 = often' and '5 = always' responses.

Administrator B (February 10, 2016) suggested: "We could improve... by ensuring that there is a middle man that is solely responsible for bringing in specific statistics to coaches... Sometimes these new research findings can get lost in the shuffle."

Element 6: Partnerships with Supporting Agencies

Table 7 demonstrates divided and critical perceptions with 34% negative, 17% positive, and 49% neutral views on this element. Item one had the most negative responses indicating that support for golfing development from various levels of government is insufficient. Administrator I (January 6, 2016) expressed concern: "The level of support from the government is slim to none. There is no sort of government program that I know of that assists people in affording or being introduced to golf. There are no requirements for schools to teach golf or even offer a golf team. Most of the support comes from organizations nationally and regionally. We could improve this by integrating the sport into schools more and taking high school golf more seriously." Administrator J (January 29, 2016) agreed with other administrators that "national recreation bodies and government do not necessarily make allowances for the game... access, trained instruction etc."

Item three had 39% negative responses indicating that roles of club/community programs in golfing development can be enhanced. Administrator G (January 8, 2016) suggested: "Clubs need to host local players that are not members of clubs, to experience private golf, to try to get all classes of people to play." Improved partnerships are important to connect NGBs with public and private organizations for both mass and elite sport programs. As demonstrated above, particularly through the NYC examples (Pennington, 2009, 2011), the opportunities for mass golf participation and

the pool of potential champions were boosted when governments worked together with such organizations as the USGA, the PGA, the National Golf Foundation, and public and private course providers. More targeted private dollars can help children across the US be healthy and successful through such programs as The First Tee (2017) aimed to "impact the lives of young people by providing educational programs that build character, instill life-enhancing values and promote healthy choices through the game of golf." Most courses offer public to play on a fee-per-round basis with no membership or other heavy fees (Adams & Rooney, 1985), and more public golf facilities could develop multiple partnerships under USGA leadership to achieve both entrepreneurial interests and objectives of municipalities.

Element 7: Balanced and Integrated Funding and Structures of Mass and Elite Sport

This appeared to be the most problematic element, as Table 8 shows, with almost half (49%) negative, 37% neutral, and only 14% positive responses. The most critically viewed was item five (67% negative), indicating the need to make specialized sport schools similar to IMG academies available and affordable to all talented golfers. Similarly, item seven (65% negative) indicated that memberships and other fees should be more affordable. Coach 61 (March 2, 2016) had a strong stance on this issue: "Golf does not have a national system. Players/families are responsible for developing their own path with some support from some great organizations. Overall, very lacking and not affordable." Coach 96 (March 2, 2016) agreed that: "There should be more of a focus of providing more opportunities to lower income athletes to receive training in golf. There are plenty of academies that athletes can attend, but the cost is out of reach for most." Administrator F (March 3, 2016) voiced a possible solution where "[administrators and coaches] can work with IMG academies to set up some financial flexibility and possibly offer financial aid type of program so that everyone from any demographic can participate."

One world's best practices used to develop healthy athletes in US sports, such as judo and taekwondo (Smolianov, Bravo, et al., 2014), still to be adopted by US golf, as indicated by item six in Table 8 (65% negative), is the multi-stage system of elite golfer qualification integrated with a system of fitness tests recommended based on comparative analysis of Asian, Eastern and Western European, and North American methods (Keating et al., 2018). Another global practice still to be adopted in the US is indicated in item three (64% negative). A Canadian-style federal tax credit for youth sport has been considered in the US where a bill was introduced in 2009 to create a fitness tax credit (Spence et al., 2010).

Improvement is also needed for item eight (59% negative) to make golf participants as diverse as the general population. According to Administrator B (February 10, 2016), "Golf participants could become more diverse by creating programs designed to reach the inner city and other impoverished areas to attract broader range of nationalities for the golfer population. The

Table 8. Balanced and Integrated Funding and Structures of Mass and Elite Sport

Desired Practices	Average Score	Distribution of Responses		
		Negative Perceptions* (%)	Neutral Perceptions* (%)	Positive Perceptions* (%)
1. Corporate and philanthropic tax incentives provide sufficient support of mass and elite golfers.	2.5	38	50	12
2. Participation in various sports, as a foundation for golfing development, is encouraged through physical education requirements.	2.6	44	45	11
3. Sport participation, including golfing, is rewarded with reduced personal tax.	1.7	64	33	4
4. Golf programs service both recreational and high performance players.	3.2	22	48	30
5. Specialized sport schools similar to IMG academies are available and affordable to all talented golfers.	2.3	67	25	9
6. A multi-stage system of elite golfer qualification is integrated with a system of fitness tests for mass participation.	2.2	65	25	9
7. Memberships and other "fees" affordable for all are available in various golf clubs.	2.4	65	25	11
8. Golfing participants are diverse as general population.	2.4	59	26	16
9. USA Golf demonstrates systematic/strategic management in developing golfers at every level.	2.6	48	28	24
10. USA Golf is effective in fostering both mass participation and high performance in golf.	2.8	34	43	22
11. Golfing is developed in integration with Olympic and Paralympic sports to achieve sustainable competitive excellence.	2.6	32	56	12
Across all items in element (N=102)	2.5	49	37	14

*Note. Possible scores on questions range from 1 to 5. Negative Perceptions is an aggregation of '1 = never' and '2 = rarely' responses. Neutral Perceptions is an aggregation of '3 = sometimes' and 'Do not know' responses. Positive Perceptions is an aggregation of '4 = often' and '5 = always' responses.

USGA has always [tried] to bring golf to areas that are less economically successful and by doing this; they can bring in a more diverse group of participants that are interested in golfing."

According to USGA financial reports, from the total annual revenue of $202 million, mass golf is estimated to generate 24% but receive 39% of expenses, while elite golf contributes an estimated 76% of revenue and receives 61% of expenses. Requiring greater support, masses contribute $12.1 million through membership, event, and program payments, compared with $16.7 million received from sponsors of elite USGA golf programs (USGA, 2016). The impact of the game is felt in the lives of millions of people. Golf, as a whole, generates more than $3.9 billion in charitable giving annually (Heitner, 2016). The United States Olympic Committee (USOC) helps fund 39 NGBs for Olympic Sports and US golf receives the least money (NBC Olympics, 2016).

Conclusions and Recommendations

The key message from the study is that sufficient public resources have not been available for development of US golf, particularly at the mass participation level. Respondents were not positive about current practices, as mean scores for each element were below average. Throughout all seven

elements, the coaches' open responses demonstrated the need for more golf facilities and funding, as well as educational and promotional support for the sport. Most of the conclusions and recommendations are consistent with the study by Project Play (2017) aimed at bettering the lives of children through sport and recreation, stressing the challenge of costs, commitment and indicating that programs need to be revitalized, with a focus on improving the quality and affordability of the offering as well as the number of participants through new places to play.

More than half of the open responses regarding talent search and development indicated that coach expertise should be advanced higher across all participant ages and levels, agreeing with Project Play (2017) about the need to improve coach education across most American sports. Many LPGA and PGA professionals come from the private sector. There needs to be more developmental programs available for public organizations. The problem is that top level coaches are paid for the knowledge they have to offer, so how could we have solid programs without an unlimited budget? High-level teaching pros would have to develop a system for less or secure funding from elsewhere. Project Play (2017) stressed that there are over 120 sports played in the US, but children who show potential are focused on one sport while other children are excluded. Higher number of sport options will encourage more athletes for life. Also, children should not do too much too soon, while simple local facilities and age appropriate programs are needed (Project Play, 2017; Ridpath, 2018).

To improve advanced athlete support, the benefits of training should focus on less experienced golfers to ensure all athletes receive equal support. In addition, most of the current support golfers receive is based on which university a student-athlete attends. Regardless of ability, all amateur golfers should be receiving necessary support services, at the very least, quality coaching.

To advance training centers, most programs should cost less and be easier to access regardless of one's financial means or golf talent. All participants should have access to lessons of teaching professionals, not only those who can pay or show promise as golfers. Programs and facilities need to be made more affordable and accepting of golfers from all levels. This system typically requires invitation-only type of entry to ensure they are attracting serious players highlighting the challenge detailed by the Project Play (2017) report which suggested schools should open their playing fields and facilities, offering more places to play in evenings, weekends, and summer months, overcoming the lack of transportation to facilities and particularly because those living within a mile of a park are four times more likely to use it than those who live farther away (Project Play, 2017). NYC's practice of connecting mass and elite golf through free youth programs detailed earlier (Pennington, 2009, 2011) could be adopted across different sports, states, and countries.

Coaches and administrators were quite critical about competition systems. The organization of many tournaments should be improved, including better communication through different mediums that attract mass participation. The USGA should communicate to and be in constant contact with high school coaches. Competition at junior levels should have a system which considers talent level, handicap, and tournament scores for qualification. This can prevent too many unqualified players competing in the wrong tournaments, which can cause higher prices for everyone.

The most important advancement of intellectual services, according to the results of this study, is to provide thorough education to more coaches. For example, the Project Play (2017) report stressed that good coaches decrease anxiety levels while increasing self-esteem, thereby prolonging an athlete's career. A lower percentage of kids who played for trained coaches quit the following year as compared to those who played for untrained coaches (Project Play, 2017).

Partnerships with supporting agencies, particularly public funding could be improved. NGBs need to work directly with the government to increase financial assistance. The government needs to be made aware of declining participation trends and how their financial assistance could improve participation rates and increase the overall health of the nation. Again, public-private golf partnerships such as the one developed in NYC (Pennington, 2009, 2011) and outreach programs such as The First Tee, Get Golf Ready, PGA Junior League, or Play Golf America should be cultivated at more locations. In addition, the instructors of these programs should be paid professionals who are serious about coaching. Golf should be promoted more in educational systems so that it becomes a primary sport. The funds are usually available but go towards more popular sports, leaving underqualified coaches running the golf programs in schools.

Funding and structures of mass and elite golf could be better balanced and integrated. Programs should be better designed and current programs enhanced further to reach inner city youth and other impoverished areas to better diversify participants. Overall, there should be more focus on providing opportunities to athletes from lower-income families. Findings from this study suggest working along with IMG-type academies in order to allow more financial flexibility and possibly propose programs accepting financial aid recipients, so that a variety of individuals from different demographics are able to learn the sport of golf. Again, the NYC (Pennington, 2009, 2011) case can serve as exemplary practice of providing free golf services to diverse participants connecting mass and elite sport for both performance and well-being of everyone.

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