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ORIGINAL RESEARCH

The Fun Integration Theory: Toward Sustaining Children and Adolescents' Sport Participation

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***Background*:** Children cite "fun" as the primary reason for participation in organized sport and its absence as the number-one reason for youth sport attrition. Therefore, the purpose of this study was to develop a theoretical framework of fun using a novel mixed-method assessment of participants in sport (FUN MAPS) via concept mapping. ***Methods*:** Youth soccer players (n = 142), coaches (n = 37), and parents (n = 57) were stratified by age, sex, and competition level and contributed their ideas through (a) qualitative brainstorming, identifying all of the things that make playing sports fun for players; (b) sorting of ideas; and (c) rating each idea on its importance, frequency, and feasibility. ***Results*:** The FUN MAPS identify the 4 fundamental tenets of fun in youth sport within 11 fun-dimensions composed of 81 specific fun-determinants, while also establishing the youth sport ethos. ***Conclusion*:** The FUN MAPS provide pictorial evidence-based blueprints for the fun integration theory (FIT), which is a multitheoretical, multidimensional, and stakeholder derived framework that can be used to maximize fun for children and adolescents to promote and sustain an active and healthy lifestyle through sport.

***Keywords*:** concept mapping, mixed-method, physical activity, youth sport

Sports are increasingly acknowledged as an important setting for accumulating needed physical activity.[1] The National Council of Youth Sports estimates that more than 60 million boys and girls participate in organized sport throughout the United States[2] and approximately 65% of youth under the age of 17 will participate in at least 1 organized sport during their childhood and adolescence.[3] Indeed, the physiological health benefits of sport participation are well documented. Sport participation for as little as 2 to 3 hours per week can result in significant cardiovascular, metabolic, and musculoskeletal adaptations independent of age and gender,[4–7] and is associated with a 7% lower risk of obesity in adulthood for girls.[8] Numerous studies have also shown the social, emotional, and cognitive benefits of sport participation.[3,9,10] In addition, compared with school-sponsored physical education, youth sport programs provide a broader community support for addressing the physical inactivity and childhood obesity epidemics by engaging children and adolescents in addition to parents, coaches, and families. However, attrition from organized youth sport is alarmingly high. In fact, one-third of participants drop out annually and as many as 70% drop out by adolescence.[3]

To a large extent, the lack of positive experiences associated with sport can explain the exodus from organized athletics at such a critical juncture in childhood.[1,11] Positive movement experiences have been deemed the key variable for sustaining children's participation in physical activities[1] and previous studies confirming this notion have identified fun as the primary reason for participation in sports teams.[12,13] Conversely, negative movement experiences can lead children to become "progressively disaffected from physical activities"[1(p297)] and the most frequently cited reason among youth for dropping out of sport is that it is no longer fun.[12]

At present, fun remains a relatively elusive concept. Limited efforts have been made to characterize and quantify fun in youth sport and there is no consensus of its meaning in the literature.[14,15] For instance, relatively few studies have attempted to identify specific factors that comprise fun in youth sports[16–20] or identify what is actually done to promote these positive movement experiences.[14] This is a significant dearth in the physical activity literature because behavioral economics posits that physical activities framed as fun, choice-driven, and rewarding are most likely to be sustained versus those of perceived drudgery and duty.[21] This is important because the health benefits of sport are highly dependent on sustained participation. Furthermore, positive movement experiences are mediated by context, setting, and most significantly the social climate generated by adults.[22] Therefore, the purpose of this study was to engage the 3 primary stakeholders of youth sport (ie, players, parents, and coaches) to develop a theoretical Framework of Fun Using a Novel Mixed-Methods Assessment of Participants in Sport (ie, the FUN MAPS) by (a) identifying the main determinants of fun; (b) grouping these fun-determinants to provide information about their interrelatedness; and (c) quantifying each fun-determinant's relative importance, frequency, and feasibility.

Methods

Study Design

Concept mapping is an applied social research method that begins with qualitative, structured group data collection processes and then applies quantitative, multivariate analytic tools to produce multiple visual maps displaying a group-specific conceptualization of a phenomenon of interest.[23] We used concept mapping to identify all of the elements that make playing sports fun for players and

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quantified these fun-determinants with respect to their importance to fun, frequency of occurrence, and feasibility of implementation. Together, the FUN MAPS (ie, the point map, the point cluster map, and the cluster rating map) provide us with a multidimensional conceptualization of fun in youth sport.

We recruited youth sport players, parents, and coaches participating in organized youth soccer programs, during the fall and spring season of the same year, from a mid-Atlantic metropolitan area within the United States. Access to participants was granted from area soccer clubs. The sport of soccer was selected because it is one of the most accessible sports across socioeconomic strata worldwide[24] and is the fastest growing youth sport[3] thus providing a significant source of study participants. Selection of participants involved purposive, stratified sampling by sport status (ie, player, parent, and coach) and by competition level (ie, recreational/classic and travel/select). Participants were also stratified by age division (eg, U9–U11, U12–U14, and U15–U19) and players were further stratified by sex (ie, girls and boys). Many parent and coach participants were recruited from player data collection sites with intact teams; however, because of the lower adult-to-player ratio at these sites adult participants were also recruited through publicly available online soccer league databases and team websites.

Concept mapping activities are time-intensive. Therefore, to further ease respondent burden, every participant received a $15 gift card to a sporting goods store for each study activity completed. Each participant's name was also entered into a lottery drawing for the chance to win a $75 sporting goods store gift card. Further, refreshments were provided to players while completing the study activities in person. The study protocol was approved by the Institutional Review Board of The George Washington University. Child and adolescent participants provided assent with parental or guardian consent, and adult participants provided informed consent.

Concept Mapping Procedures

Concept mapping can be conducted with participants in person or remotely via the internet using The Concept System Global MAX software. The methods involve 3 relatively task intensive participant activities: brainstorming, sorting, and rating. Therefore, to increase convenience among adult participants (ie, parents and coaches), these persons were invited to participate online. However, to best account for the developmental differences among the varying ages of the children and adolescents, concept mapping activities were conducted in person in small groups for players and took place on-site immediately following practices or games, during sports camps, or other team functions. These combined multimethod data collection means (ie, in-person and remote) are common in concept mapping studies and a pooled study analysis of concept mapping projects observed no meaningful differences between the 2 data collection modes with respect to estimates of reliability and validity.[25] This approach to data collection does not necessitate each participant's involvement in every task.[23] In this study, while many participants (44.92%) did contribute data to all tasks, some participants only participated in one or the other (ie, brainstorming or sorting/rating). Participants completed the following concept mapping protocol.

Brainstorming. The objective of this activity was to generate a comprehensive list of ideas related to what makes playing sports fun. Participants completed the focus prompt in the sentence-stem format, "*One thing that makes playing sports fun for players is . . .* ." When brainstorming, participants were instructed to think of all of the things that make participating in sports fun across the many sports that they participate in. Each player generated her or his own independent list of ideas, followed by a short group discussion to build context regarding the players' ideas. Parents and coaches completed the sentence stem online, where they were instructed to brainstorm as many fun things as they could; these statements were anonymously added to a collective, running list of statements generated by all participants. This virtual method created an environment of shared ideas.

Once brainstorming activities had been completed, player-generated statements were pooled with the parent- and coach-generated statements. This raw statement list was then refined through idea synthesis, a type of structured content analysis. Because brainstorming took place with many stakeholder groups, there was a great deal of redundancy in ideas. Therefore, redundant ideas were synthesized into 1 statement, maintaining the participants' wording and detail. Statements that were sport-specific were refined to be generalizable across team sports. Thus, statements that were relevant, understandable by all participants, rate-able, and representative of the collective saturation of brainstormed ideas were retained. This resulted in a final list of 81 statements. These 81 statements were edited for syntactic consistency and became the basis for the sorting activity.

Sorting. Participants next were instructed to independently sort and group the statements together into piles in a way that made sense to them; these instructions allow for participants to have as many or as few piles as necessary depending on their understanding of each statement's meaning. To manually sort items into piles, each statement was placed on a single laminated card. Players received a stack of cards containing all 81 statements with the cards in each deck randomized in identical order. This same, randomized ordering of statements was used for remote sorting and rating as well in which parents and coaches used a drag-and-drop method to pile sort online. When sorting, participants were asked to adhere to the following rules: (1) do not sort by value or preference of a statement idea; (2) do not create a miscellaneous or junk pile, therefore a statement can stand on its own; and (3) statements can only be placed into 1 pile. As participants sorted, or upon completion of sorting, they were instructed to give each pile a name that described the collective meaning for the group of statements. Piles were double-checked for adherence to the sorting rules and then recorded.

Rating. Following sorting, participants rated each of the statements on a 1 to 5 Likert-type scale relative to its (a) *frequency of occurrence* from 1 (never happens) to 5 (always happens), (b) *importance to fun* from 1 (not as important) to 5 (extremely important), and (c) *how feasible/possible* it is to implement from 1 (not as possible) to 5 (extremely possible). Ratings were checked to ensure there were no unintentionally skipped items. Manual sorting and rating data were entered into the statistical software and the entered data were double-checked by a second person to ensure its accuracy.

Statistical Analysis

Data analysis for concept mapping is an iterative process. First, the Concept Systems Global MAX software was used to construct a similarity matrix from the sorting data. Second, multidimensional scaling (MDS) was applied with a two-dimensional solution. The MDS places the points on the FUN MAPS with each point representing 1 of the 81 statements. The location of each point's placement on the map is an indicator of its relationship to all other points. Points more proximal to each other were sorted together more often and points more distal from one another were sorted together less often. The point map (see Figure 1) is the first of the FUN MAPS constructed from the data analysis and is the basis from which all

other FUN MAPS are derived (eg, the point cluster map and the cluster rating map).

The goodness-of-fit of the point-map's configuration of the data are measured by its stress value. Stress values range from 0 to 1 where lower values indicate better congruence between the raw data and the processed data. Two-dimensional MDS solutions with stress values below the upper limit of .39 have been found to have less than a 1% probability of having no structure or a random structure.[26] Our stress value was .22, indicating that our point map was not random or without structure, and represented our complex set of multivariate data quite well.[27] Third, hierarchical cluster analysis was conducted on the MDS solution using Wards algorithm, which partitioned the points on the map into thematic clusters, creating a point cluster map (see Figure 2). The Concept Systems software can construct any number of cluster-map solutions; the number of clusters for a map can range from 2 to N-1, where N is the total number of statements and is decided based on a combination of statistical analysis, expert judgment, and participant feedback. The average number of clusters for concept maps is 8.93, ranging from a low of 6 to a high of 14.[25]

We performed several iterations of the cluster replay map which successively displayed maps with fewer and fewer cluster-solutions. Cluster maps with 7, 8, 9, 10, 11, and 12 cluster-solutions were examined more closely conceptually. It was determined that of these maps, those with a greater number of clusters generated more specific themes which lend more easily to action-oriented pro-

Figure 1 — The point map pictorially displays the 81 fun-determinants that were brainstormed and sorted by players, parents, and coaches. Points that are located closer to one another on the map are more similar to one another than points located more distally from one another.

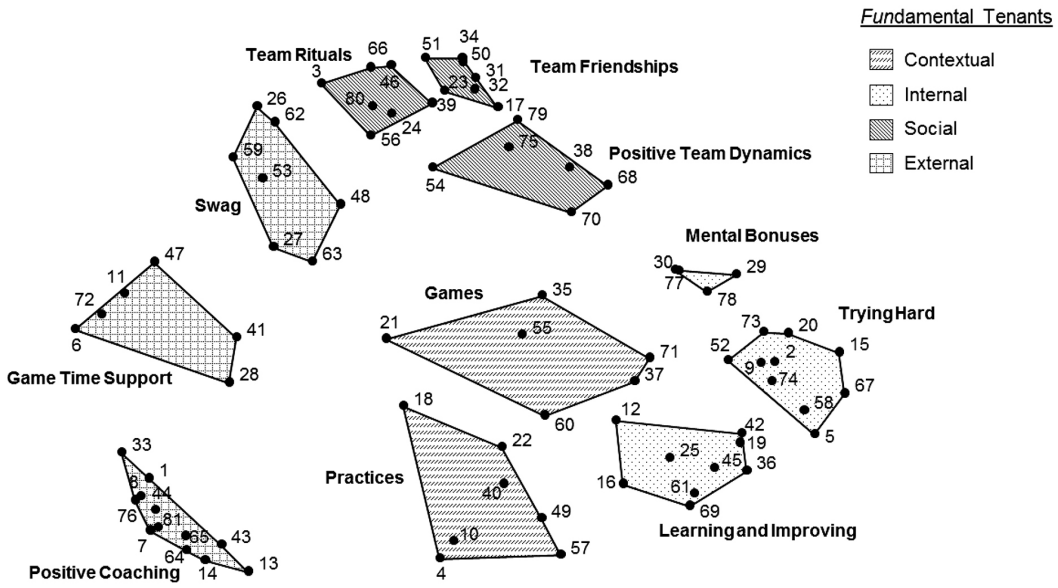

Figure 2 — The point cluster map illustrates the 11 dimensions of fun conceptualized from the 81 fun-determinants by players, parents, and coaches. The patterns represent the 11 fun-dimensions as 4 overarching *fun*damental tenets of fun.

gramming and intervention in youth sport. Examined more closely at statement level, the 11-solution map was also found to be most representative of the clustering of ideas consistent with previous literature in the area. However, there were 6 data points (ie, statement numbers 12, 18, 39, 54, 75, 79) retained in clusters whose closest, adjacent cluster appeared to be a better fit conceptually. Therefore, these items were examined more closely quantitatively using spanning analyses to examine each point's bridging index (BI). The BI values are a measure of whether a statement was generally sorted with nearby statements (values close to 0) or with items located in other areas of the concept map (values closer to 1). Thus, items with lower bridging indices indicate more stable, and narrowly focused thematic content.[23] Using these quantitative methods, combined with expert best-judgment practices, the 6 statements were redistributed to the nearest adjacent cluster that described their ideas more accurately and appropriately. This was done by manually redrawing cluster boundaries to include the point in question, without altering the point's geographical position or relational location on the map. From this modified 11-solution map, a cluster rating map was also computed to better understand the perceived importance of each of the clusters relative to one another. The cluster rating map displays this data in three-dimensional space using a cluster layering effect whereby layers are used to represent a cluster's relative importance, which is based on the aggregate mean scores of the statements contained in that cluster. Therefore, the height of a cluster is directly proportional to its perceived importance by stakeholders (see Figure 3).

Results

The descriptive statistics of the sample for the sorting and rating groups, on which all quantitative analyses are based, are listed in Table 1. Interestingly, 80% of players, 93% of parents, and 94% of coaches indicated that playing time was very-to-extremely important to youth sport participation. In addition, 75.5% of players indicated that they participated in 1 or more other sports, in addition to soccer.

Brainstorming: Fun-Determinants

The 81 statements identified via brainstorming as comprising fun for players participating in youth sport are listed in Table 2. Collectively, the fun-determinants represented a synthesis of team-sport specific statements generated by players, parents, and coaches.

Sorting: Conceptualizing Fun

Figure 1 spatially represents each of the 81 fun-determinants as a point map, with determinants positioned closer to one another on the map representing similar ideas. From the point map, hierarchical cluster analysis was applied creating a point cluster map which identified 11 distinct thematically-clustered dimensions of fun collectively conceptualized as 4 discrete overarching *fun*damental tenets of fun: (a) *contextual*: Games and Practices; *internal*: Learning and Improving, Trying Hard, and Mental Bonuses; (b) *social*: Positive Team Dynamics, Team Friendships, and Team Rituals; and (c) *external*: Swag, Game Time Support, and Positive Coaching (see Figure 2). Each dimension's name is based on the label that was provided most frequently by participants and was the most representative of the grouped statements. Among the 11 dimensions, the lowest BI values observed included "Team Friendships" (0.08), "Team Rituals" (0.12), and "Positive Coaching" (0.31), indicating more narrowly focused thematic content as evidenced by these dimensions more compact shape on the point cluster map.[23] Lower BI values indicate there was less variability in how the fun-determinants in these dimensions were sorted, thus there was greater consensus among stakeholders' perception of the determinants in these dimensions (see Table 2 for all BI values).

Rating: Quantifying Fun

Figure 3 is a three-dimensional cluster-rating map where a greater number of layers indicate higher perceived importance to players' perception of fun. The top 3 rated dimensions of fun were Being Positive Team Dynamics (4.22), Trying Hard (4.19), and Positive

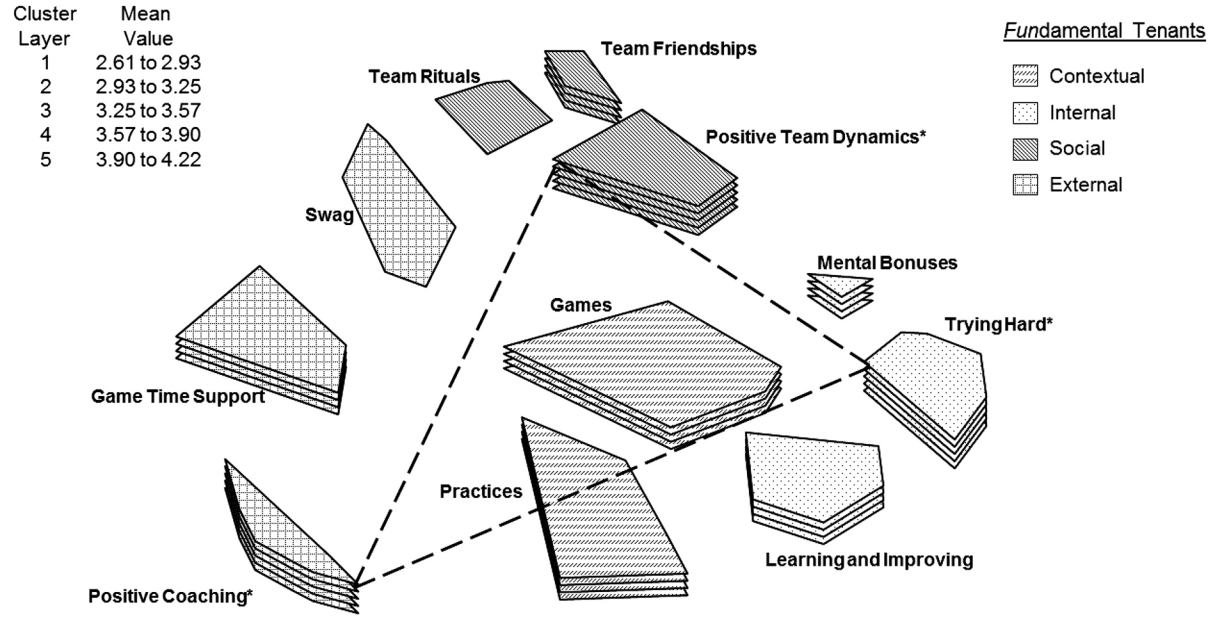

Figure 3 — The cluster rating map combines qualitative and quantitative data by representing the mean importance rating for each dimension via layers; dimensions with a greater number of layers indicate greater importance to fun. Connected via dashed lines, the 3 highest rated dimensions of fun, "*Being a good sport,*" "*Trying hard,*" and "*Positive coaching*" collectively define the youth sport ethos.

Table 1 Stakeholders' Sociodemographics

	No. (%)		
Demographic variable	**Players (N = 142)**	**Parents (N = 57)**	**Coaches (N = 37)**
Gender			
Male	73 (51.4)	19 (33.0)	29 (78.0)
Female	69 (48.6)	38 (67.0)	8 (22.0)
Age group			
U9–U11	49 (34.5)	23 (40.0)	13 (35.0)
U12–U14	48 (33.8)	22 (39.0)	12 (32.0)
U15–U16	45 (31.7)	12 (20.0)	12 (32.0)
Competition level			
Recreational/classic	66 (46.5)	30 (53.0)	16 (43.0)
Travel/select	76 (53.5)	27 (47.0)	21 (57.0)
Ethnicity			
Hispanic or Latino	25 (17.6)	4 (7.0)	3 (8.1)
Not Hispanic or Latino	117 (82.4)	53 (93.0)	34 (91.9)
Race			
American Indian/Alaska Native	1 (0.7)	0 (0.0)	0 (0.0)
Asian	7 (4.9)	1 (1.8)	1 (2.7)
Black or African American	21 (14.8)	7 (12.3)	4 (10.8)
Native Hawaiian/Pacific Islander	2 (1.4)	0 (0.0)	0 (0.0)
White	111 (78.2)	49 (86.0)	32 (86.5)
Importance of playing time			
Relatively unimportant	0 (0.0)	0 (0.0)	0 (0.0)
Somewhat important	3 (2.1)	1 (2.0)	1 (3.0)
Moderately important	25 (17.6)	3 (5.3)	1 (3.0)
Very important	76 (53.5)	32 (56.0)	16 (43.0)
Extremely important	38 (26.8)	21 (37.0)	19 (51.0)
Play more than 1 sport			
Yes	105 (75.5)	–	–
No	34 (24.5)	–	–
	Mean (SD)		
Age	12.7 (2.69)	46.5 (6.85)	41.8 (12.0)
Years participating in sports	7.9 (2.68)	7.7 (5.10)	10.6 (8.2)

Coaching (4.13), followed by Learning and Improving (3.75), Games, (3.71), Practice (3.69), Team Friendships (3.68), Mental Bonuses (3.58), Team Rituals (2.85), and Swag (2.61). Mean values for each of the 81 fun-determinants relative to their perceived importance, frequency, and feasibility are also reported in Table 2. The rating values for importance ranged from a low of 2.15 to a high of 4.68. Frequency ranged from a low of 1.97 to a high of 4.54 and feasibility ranged from a low of 2.48 to a high of 4.66.

Post Hoc Analyses

Using SPSS 21.0, a series of Pearson Product-Moment Correlations were generated to examine the associations among each dimension's perceived importance to fun and its frequency of occurrence, as well as its importance to fun and its feasibility. Results indicated that the importance ratings among all 11 fun-dimensions were significantly and positively related to the cluster's feasibility and frequency ratings ($P < .01$; see Table 3). Lastly, dependent sample *t*-tests were conducted to determine if the top 3 rated fun-dimensions were significantly greater than the fourth rated dimension, relative to importance. Results indicated that "Positive Team Dynamics" [$t\,(227) = 13.26$, $P < .001$, Cohen's $d = .85$], "Trying Hard" [$t\,(230) = 12.68$, $P < .001$, Cohen's $d = .90$], and "Positive Coaching" [$t\,(229) = 10.69$, $P < .001$, Cohen's $d = .70$] were each rated as being significantly more important determinants of fun than the fourth highest-rated cluster, "Learning and Improving."

Discussion

There lacks a well-developed theoretical model that provides a big picture overview of the determinants of fun and how these translate

Table 2 Importance, Frequency, Feasibility, and Bridging Index for the 81 Fun-Determinants by Dimension

	No.	Determinant	Importance Rating	Frequency Rating	Feasibility Rating	Bridging Value
Positive Team Dynamics			4.22	4.00	4.23	0.42
	38	Playing well together as a team	4.55	3.86	4.07	0.22
	54	Being supported by my teammates	4.32	4.08	4.28	0.28
	79	Supporting my teammates	4.31	4.18	4.37	0.71
	70	When players show good sportsmanship	4.30	3.91	4.15	0.45
	75	Getting help from teammates	4.07	3.85	4.13	0.55
	68	Warming up and stretching as a team	3.76	4.10	4.36	0.31
Trying Hard			4.19	4.04	4.28	0.39
	73	Trying your best	4.68	4.40	4.64	0.56
	5	Exercising and being active	4.48	4.54	4.66	0.30
	58	Working hard	4.47	4.29	4.57	0.43
	2	Playing well during a game	4.44	3.81	4.14	0.24
	20	Being strong and confident	4.36	3.97	4.16	0.35
	67	Getting/staying in shape	4.32	4.22	4.39	0.46
	52	Competing	4.26	4.51	4.51	0.36
	9	Making a good play (scoring, making a big save, etc.)	4.21	3.83	4.01	0.31
	74	Setting and achieving goals	4.07	3.76	4.21	0.59
	15	Playing rough	2.58	3.08	3.45	0.32
Positive Coaching			4.13	3.93	4.14	0.31
	44	When a coach treats players with respect	4.57	4.34	4.38	0.33
	8	When a coach encourages the team	4.47	4.25	4.47	0.18
	65	Having a coach who is a positive role model	4.45	4.08	4.22	0.34
	14	Getting clear, consistent communication from coaches	4.33	3.88	4.13	0.24
	13	A coach who knows a lot about the sport	4.32	4.27	4.19	0.19
	64	A coach who allows mistakes, while staying positive	4.31	3.87	3.99	0.33
	7	A coach who listens to players and takes their opinions into consideration	4.18	3.59	4.04	0.18
	81	A coach who you can talk to easily	4.14	3.85	4.00	0.65
	76	A nice, friendly coach	4.11	4.10	4.14	0.49
	1	Getting compliments from coaches	3.99	3.89	4.40	0.17
	43	When a coach participates with players during practice	3.47	3.47	3.91	0.32
	33	When a coach jokes around	3.27	3.51	3.75	0.25
Learning and Improving			3.75	3.69	3.92	0.33
	16	Being challenged to improve and get better at your sport	4.29	4.08	4.28	0.26
	42	Learning from mistakes	4.21	3.83	4.09	0.32
	69	Ball touches (dribbling, passing, shooting, etc.)	4.18	4.34	4.44	0.46
	36	Improving athletic skills to play at the next level	4.16	3.81	3.96	0.31
	61	Learning new skills	4.15	3.86	4.23	0.40
	19	Using a skill you learned in practice during a game	3.77	3.68	3.91	0.28
	25	Playing different positions	3.33	3.47	3.89	0.31
	12	Going to sports camp	2.84	3.24	3.28	0.24
	45	Copying the moves and tricks that professional athletes do	2.83	2.94	3.20	0.36
Game Time Support			3.75	3.94	4.04	0.93
	72	When parents show good sportsmanship (encouraging, not yelling)	4.05	3.94	4.03	1.00
	28	A ref who makes consistent calls	3.93	2.98	3.17	0.91
	41	Being congratulated for playing well	3.89	4.23	4.38	0.97
	47	Having people cheer at the game	3.69	4.39	4.36	0.98
	11	Having your parent(s) watch your games	3.64	4.29	4.17	0.88
	6	Getting complimented by other parents	3.29	3.78	4.13	0.82
Games			3.71	3.66	3.70	0.42
	60	Getting playing time	4.55	4.48	4.38	0.51
	37	Playing your favorite position	3.85	3.86	3.84	0.42
	71	Playing against an evenly matched team	3.82	3.54	3.59	0.53
	35	Being known by others for your sport skills	3.48	3.60	3.64	0.33
	21	Playing on a nice field	3.34	3.39	3.40	0.30
	55	Playing in tournaments	3.21	3.06	3.36	0.43

(continued)

Table 2 *(continued)*

	No.	Determinant	Importance Rating	Frequency Rating	Feasibility Rating	Bridging Value
Practices			3.69	3.71	4.02	0.62
	10	Having well-organized practices	4.18	3.76	4.09	0.54
	22	Having the freedom to play creatively	3.86	3.71	3.84	0.62
	18	Taking water breaks during practice	3.83	4.33	4.53	0.57
	49	Scrimmaging during practice	3.79	4.10	4.39	0.71
	57	Doing lots of different drills and activities during practice	3.74	3.77	4.17	0.71
	40	Partner and small group drills	3.38	3.69	4.06	0.64
	4	Practicing with specialty trainers/coaches	3.05	2.61	3.06	0.52
Team Friendships			3.68	3.95	4.03	0.08
	17	Getting along with your teammates	4.49	4.30	4.19	0.00
	23	Being around your friends	3.96	4.34	4.23	0.03
	50	Having a group of friends outside of school	3.74	4.11	4.16	0.14
	32	Being part of the same team year after year	3.55	4.02	3.89	0.08
	51	Hanging out with teammates outside of practice or games	3.47	3.63	3.93	0.17
	34	Talking and goofing off with teammates	3.30	3.82	3.98	0.08
	31	Meeting new people	3.24	3.46	3.82	0.04
Mental Bonuses			3.58	3.41	3.57	0.54
	29	Keeping a positive attitude	4.44	3.95	4.19	0.50
	30	Winning	3.65	3.56	3.65	0.51
	77	It relieves stress	3.45	3.59	3.70	0.52
	78	Ignoring the score	2.78	2.55	2.75	0.63
Team Rituals			2.85	3.29	3.69	0.12
	39	High-fiving, fist-bumping, hugging	3.24	3.79	4.07	0.08
	56	Showing team spirit (through gear, ribbons, signs, etc.)	3.08	3.02	3.57	0.15
	24	Doing team rituals	2.91	3.11	3.63	0.05
	3	End-of-season/team parties	2.90	4.04	4.08	0.04
	46	Carpooling with teammates to practices and games	2.70	3.48	3.65	0.11
	66	Going out to eat as a team	2.67	2.77	3.28	0.19
	80	Doing a cool team cheer	2.49	2.80	3.54	0.23
Swag			2.61	3.07	3.34	0.58
	27	Having nice sports gear and equipment	3.12	3.68	3.48	0.46
	63	Earning medals or trophies	3.01	3.25	3.48	0.73
	53	Traveling to new places to play	2.71	2.88	3.18	0.62
	48	Wearing a special, cool uniform	2.66	3.57	3.59	0.54
	62	Eating snacks/treats after the game	2.37	2.97	3.54	0.64
	26	Staying in hotels for games/tournaments	2.21	1.97	2.48	0.46
	59	Getting pictures taken	2.15	3.17	3.61	0.64

Note. The fun-dimensions and fun-determinants are presented from highest to lowest values importance value. The determinant number corresponds to its placement on the point map and point cluster maps, respectively.

into a robust, multidimensional conceptualization of today's fun youth sport experience. Concept mapping is a structured, inductive, mixed-method approach to theory development.[27] Therefore, using concept mapping, the purpose of this study was to develop an evidence-based theoretical framework of fun for organized sport participants by (a) identifying the full range of possible determinants of fun in youth sport; (b) structuring these determinants into conceptual maps that provide key information regarding how the fun-determinants are interrelated; and (c) quantifying the importance, frequency, and feasibility of each determinant relative to all other determinants. Concept mapping generated numerous FUN MAPS (ie, a point map, a point cluster map, and a cluster rating map) each of which provides a visual topography of novel findings with respect to understanding the multifaceted complexity of positive, fun movement experiences for children and adolescents participating in organized youth sport.

The Fun Integration Theory

From a grounded theory approach, the FUN MAPS provide evidence-based blueprints for the fun integration theory (FIT), the only stakeholder-derived and fully conceptualized theoretical framework for understanding exactly what constitutes fun in youth sport today and how best to foster such fun sport experiences. Indeed, this is a crucial science and practice development because fun is the single largest predictor of sport commitment and sustained participation in childhood and through adolescence.[13] The FIT identifies the determinants of fun, their respective dimensions and associated *fun*damental tenets, while also forwarding a standard practice for promoting fun in youth sport.

Determinants and Dimensions of Fun. Rather than impose our a priori definition of the things that make playing sport fun for children and adolescents, concept mapping enabled us to innovatively derive

Table 3 Relationships Among Importance, Frequency, and Feasibility Rating Variables for Each Fun-Dimension

Cluster (importance)	Frequency	Feasibility
1. Positive Team Dynamics	.52*	.43*
2. Trying Hard	.63*	.56*
3. Positive Coaching	.47*	.49*
4. Learning and Improving	.60*	.55*
5. Game Time Support	.44*	.47*
6. Games	.49*	.47*
7. Practices	.39*	.41*
8. Team Friendships	.51*	.52*
9. Mental Bonuses	.49*	.50*
10.Team Rituals	.56*	.51*
11.Swag	.49*	.53*

* Pearson Product Moment Correlation coefficient is significant at the 0.01 level (2-tailed).

original, specific ideas directly from players, parents, and coaches. Previous research has established 10 to as many as 28 specific things that influence fun, with some studies grouping these findings thematically into 3 to 6 overarching categories of fun.[11,16–19,28] Our findings support these multiple reoccurring fun themes, such as self-referenced competency, coaching encouragement, and personal accomplishment, while extending the scope of fun-determinants well beyond what has previously been found. Ultimately, we observed 81 fun-determinants, representing a best fitting, complete saturation of ideas generated by the most relevant stakeholders of organized youth sport (see Table 1 and Figure 1). Concept mapping is a particularly powerful applied social research method because it not only enabled us to engage players, parents, and coaches to generate these 81 fun-determinants, but also to organize these determinants in a meaningful way, creating understanding and consensus regarding the multidimensionality of fun. In sum, fun is composed of 11 discrete dimensions (ie, Positive Team Dynamics, Trying Hard, Positive Coaching, Learning and Improving, Game Time Support, Games, Practices, Team Friendships, Mental Bonuses, Team Rituals, and Swag), each of which is operationally defined by the specific, actionable fun-determinants (see Figure 2).

Multitheoretical Model. Future research would be pressed to find a new fun-determinant that does not fit within 1 of the 11 identified fun-dimensions because the FUN MAPS visually represent the composite thinking of all 3 stakeholders while also representing the most theoretically-cooperative conceptual model of fun for organized youth sport to date. Most remarkably, the FIT provides an integrative theoretical framework that parsimoniously synergizes the major models and theories that have been applied independently to understand sport participation and motivation in youth sport. For example, the dimensions "Learning and Improving" and "Trying Hard" illustrate the principles of achievement goal theory[29] and competence motivation theory[30] while the "Positive Coaching" dimension exemplifies the 4Cs[31,32] model (ie, competence, confidence, connection, and character) of established coaching techniques that positively influence children's sport experiences. Likewise, the 81 fun-determinants can also be considered either intrinsic or extrinsic motives known to influence the initiation and maintenance of sport participation consistent with self-determination theory.[33]

Fundamental Tenets. The FUN MAPS also aid in understanding how each of the 81 discrete, yet associated ideas interconnect as 11 distinct, major dimensions that collectively make up 4 *fun*damental tenets (see Figure 2) for fostering fun experiences in youth sport: *contextual fundamentals* (Practices and Games), *internal fundamentals* (Learning and Improving, Trying Hard, and Mental Bonuses), *social fundamentals* (Team Friendships, Team Rituals, and Positive Team Dynamics), and *external fundamentals* (Positive Coaching, Game Time Support, and Swag). These *fun*damental tenets and their respective placement on the FUN MAPS underscore the dynamic interplay among the dimensions of fun. For example, the contextual *fun*damentals are located centrally on the maps, emphasizing that organized youth sport is coordinated with the objective of optimizing positive, fun movement experiences through structured skill development and competitive play within "Practices" and "Games." Subsequently, the relatedness of the other 9 fun-dimensions is represented by their placement on the map as well whereby the other 3 *fun*damental tenets (ie, internal, social, and external) either closely or more distally revolve around fun's contextual *fun*damental.

The Youth Sport Ethos. From our combined qualitative- and quantitative-methods, the FUN MAPS further advance our understanding of positive, fun movement experiences by establishing the *youth sport ethos.* Represented three-dimensionally, the youth sport ethos identifies the 3 most important dimensions of fun relative to all of the other dimensions each of which represents the *fun*damental tenets, namely "Positive Team Dynamics" (social *fun*damental), "Trying Hard" (internal *fun*damental), and "Positive Coaching" (external *fun*damental), a trifecta of diametrically related dimensions that are paramount for maximizing fun experiences in "Practices" and "Games" (contextual *fun*damental). In fact, the youth sport ethos sets the standard for fostering fun and provides 28 singular, fun-derminant ideas that are directional beacons for promoting a culture of fun, without sacrificing individual and team achievement.

Conclusion

Sport participation is a means of acquiring national recommended guidelines for physical activity[1,4] and is, in fact, the primary means of activity for many children.[34] However, the benefits of sport participation are highly dependent on continued involvement which is, in turn, mediated by fun experiences throughout children's youth sport development. The FUN MAPS provide evidence-based blueprints for the FIT, which is a multitheoretical, multidimensional, and stakeholder derived framework for fostering positive, fun movement experiences through structured skill development and competitive play for youth sport participants. The FIT identifies 81 specific fun-determinants within 11 fun-dimensions which describe the 4 *fun*damental tenets of fun (contextual, internal, social, and external), and establishes the youth sport ethos, a standard of 3 dimensions of fun that are most important to promoting fun in youth sport today.

The FIT is a particularly strong theoretical framework because of the innovative method in which it was conceptualized using an inductive, mixed-method concept mapping phased approach, which engaged the most relevant stakeholders within a youth sport community as research collaborators. To date, few studies have used both qualitative and quantitative methods when studying youth sport. The importance of this approach was observed when the value

of "Positive Team Dynamics" and "Trying Hard" was greater than ostentatious themes such as "Swag" and "Team Rituals" given the high frequency with which fun-determinants such as "Team parties" and "Staying in hotels for games/tournaments" surfaced during the qualitative brainstorming discussions. The availability heuristic[35] states that the most common responses should also hold the greatest value; however, when participants were asked to quantify each determinant's importance to fun relative to all of the other determinants the availability heuristic was not supported. This confirms that using only qualitative data would have significantly altered the outcome of this study, providing a less accurate and complete overall picture of fun in youth sport. This phenomenon illustrates the power of combining qualitative and quantitative analyses.

Subsequently, on the whole, the FIT provides youth sport stakeholders and public health practitioners with 81 tenable suggestions (ie, fun-determinants) to improve the fun experience based upon sound, empirically-validated evidence, thus bridging the gap between science and practice. The fun-determinants can be conveniently converted to practice plans for coaches, set a standard for parent education and behavior at youth sporting events, inform coaching education and certification programs, as well as serve as the basis for fostering positive, collaborative dynamics among teammates. In fact, the importance ratings can be used as a navigational tool to guide the progressive order in which determinants are implemented and promoted. Coupled with feasibility and frequency ratings, these are the first data to provide an environmental scan of youth sport participants' perceptions of fun with regard to each fun-determinant's practicability, as well as its prevalence, respectively. Thus, the FIT is an innovative theoretical framework because it is grounded in robust, multivariate visual blueprints which can easily be translated into operational reality by players, parents, coaches, and league administrators to independently and collectively foster and maximize fun sport experiences such that children want to continue participating in organized youth sport.

Future Directions

One major limitation of this study was the sole sampling of team sport participants from soccer; thus, the FUN MAPS include determinants that may not be as relevant to athletes who compete in figure skating or track and field, for instance. Thus, the determinants of fun should also be validated within other sports, including individual activities. However, the novel methodology used within our study is an effective tool for youth sport practice as well as research and is especially valuable in wholly and concretely elucidating the concept of fun, which has eluded sport scientists and practitioners previously. In addition, evaluating the differences among players, parents, and coaches perceptions of the importance and frequency with which these fun-determinants occur are of significance and will be addressed in future research.

From an applied practice perspective, there is value in having the capability to assess a club and/or team's strengths in fostering fun, as well as the areas in which challenges are faced with respect to youth sport programming. Therefore, future research should develop valid and reliable survey instruments that measure the independent determinants and collective constructs of fun. These evaluation metrics can, in turn, inform sport administrators regarding policy implications and the need for interventions within their clubs and teams. In addition, future research should develop a concept map of "barriers to fun" in youth sport and the degree to which each barrier impedes the fun experience. It is likely that the elements that get in the way of fun are more than merely the absence of the 81 fun-determinants.

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References

1, Bailey R, Hillman C, Arent S, Petipas A. Physical activity: an underestimated investment in human capital. *J Phys Act Health*. 2013;10:289–308. PubMed
2, National Council of Youth Sports. *Report on trends and participation in organized youth sport*. Stuart, FL: National Council of Youth Sports; 2008.
3, Eitzen DS, Sage GH. *Sociology of North American Sport*. 8th ed. Boulder, CO: Paradigm Publishers; 2009.
4, Bangsbo J, Nielsen JJ, Mohr M, et al. Performance enhancements and muscular adaptations of a 16-week recreational football intervention for untrained women. *Scand J Med Sci Sports*. 2010;20(1):24–30. PubMed doi:10.1111/j.1600-0838.2009.01050.x
5, Faude O, Kerper O, Muthaupt M, et al. Football to tackle overweight in children. *Scand J Med Sci Sports*. 2010;20(1):103–110. PubMed doi:10.1111/j.1600-0838.2009.01087.x
6, Randers MB, Nielson JJ, Krustrup BR, et al. Positive performance and health effects of a football training program over 12 weeks can be maintained over a 1-year period with reduced training frequency. *Scand J Med Sci Sports*. 2010;20(1):80–89. PubMed doi:10.1111/j.1600-0838.2010.01091.x
7, Randers MB, Nybo L, Petersen J, et al. Activity profile and physiological response to football training for untrained males and females, elderly, and youngsters: Influence of number of players. *Scand J Med Sci Sports*. 2010;20(1):14–23. PubMed doi:10.1111/j.1600-0838.2010.01069.x
8, Kaestner R, Xu X. Title IX, girls' sports participation, and adult female physical activity and weight. *Eval Rev*. 2010;34(1):52–78. PubMed doi:10.1177/0193841X09353539
9, Ottesen L, Jeppesen RS, Krustrup BR. The development of social capital through football and running: Studying an intervention program for inactive women. *Scand J Med Sci Sports*. 2010;20(1):118–131. PubMed doi:10.1111/j.1600-0838.2010.01123.x
10, Smoll FL, Smith RE. *Children and youth in sport: a biopsychosocial perspective*. Madison, WI: Brown & Benchmark Publishers; 1996.
11, Fraser-Thomas J, Côté J. Youth sports: implementing findings and moving forward with research. *Athl Ins*. 2006;8(3):12–27.
12, Petlichkoff LM. Youth sport participation and withdrawal: Is it simply a matter of fun? *Pediatr Exerc Sci*. 1992;4:105–110.
13, Scanlan TK, Carpenter PJ, Schmidt GW, Simons JP, Keeler B. An introduction to the Sport Commitment Model. *J Sport Exer Psychol*. 1993;15:1–15.

14, Bengoechea EG, Strean WB, Williams DJ. Understanding and promoting fun in youth sport: coaches' perspectives. *Phys Educ Sport Pedagogy*. 2004;9(2):197–214. doi:10.1080/1740898042000294994
15, Green BC. Building sport programs to optimize athlete recruitment, retention, and transition: toward a normative theory of sport development. *J Sport Manag*. 2005;19:233–253.
16, Wiersma LD. Conceptualization and development of the Sources of Enjoyment in Youth Sport Questionnaire. *Meas Phys Educ Exerc Sci*. 2001;5(3):153–177. doi:10.1207/S15327841MPEE0503_3
17, Wankel LM, Sefton JM. A season-long investigation of fun in youth sports. *J Sport Exer Psychol*. 1989;11(4):355–366.
18, Riewald ST. Strategies to prevent dropout from youth athletics. *New Stud Athlet*. 2003;18(3):21–26.
19, Tuffey S, Medbery R, Gould D. *Kids tell us what is fun*. Greensboro, NC: USA Swimming and the U.S. Ski and Snowboard Association; 2006.
20, Strean WB, Holt NL. Coaches', athletes', and parents' perceptions of fun in youth sports: assumptions about learning and implications for practice. *Avante*. 2000;6(3):83–90.
21, Zimmerman FJ. Using behavioral economics to promote physical activity. *Prev Med*. 2009;49:289–291. PubMed doi:10.1016/j.ypmed.2009.07.008
22, Kremarik F. A family affair: children's participation in sports. *Can Soc Trends*. 2000;58:20–24.
23, Kane M, Trochim WMK. *Concept mapping for planning and evaluation*. Sage Publications; 2007.
24, Metzl J, Micheli L. Youth soccer: an epidemiological perspective. *Clin Sports Med*. 1998;17:663–673. PubMed doi:10.1016/S0278-5919(05)70110-1
25, Rosas SR, Kane M. Quality and rigor of the concept mapping methodology: a pooled study analysis. *Eval Program Plann*. 2012;35(2):236–245. PubMed doi:10.1016/j.evalprogplan.2011.10.003
26, Sturrock K, Rocha J. A multidimensional scaling stress evaluation table. *Field Methods*. 2000;12(1):49–60. doi:10.1177/1525822X0001200104
27, Burke JG, O'Campo P, Peak GL, Gielen AC, McDonnell KA, Trochim WMK. An introduction to concept mapping as a participatory public health research method. *Qual Health Res*. 2005;15(10):1392–1410. PubMed doi:10.1177/1049732305278876
28, MacDonald DJ, Côté J, Eys M, Deakin J. The role of enjoyment and motivational climate in relation to the personal development of team sport athletes. *T Sport Psychol*. 2011;25:32–46.
29, Nicholls JG. *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press; 1989.
30, Harter S. Effectance motivation reconsidered. *Hum Dev*. 1978;21:34–64. doi:10.1159/000271574
31, Lerner RM, Lerner JV, Almerigi J, et al. Positive youth development, participation in community youth development programs, and community contributions of fifth grade adolescents: findings from the first wave of the 4-H Study of Positive Youth Development. *J Ear Adol*. 2005;25(1):17–71. doi:10.1177/0272431604272461
32, Côté J, Bruner MW, Erickson K, Strachan L, Fraser-Thomas J. Athlete development and coaching. In: Lyle J, Cushion C, eds. *Sport coaching: professionalization and practice*. Oxford, UK. 2010:63–85.
33, Deci EL, Ryan RM. *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum; 1985.
34, Fox CK, Barr-Anderson D, Neumark-Sztainer D, Wall M. Physical activity and sports team participation: associations with academic outcomes in middle school and high school students. *J Sch Health*. 2010;80(1):31–37. PubMed doi:10.1111/j.1746-1561.2009.00454.x
35, Sullivan L. *The SAGE Glossary of the Social and Behavioral Sciences* [e-Book]. SAGE 2009:36. Available from: eBook Collection (EBSCOhost). Ipswich, MA, Accessed April 15, 2013.