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BASKETBALL FACILITY CASE STUDY

Scholastic Basketball Facilities: A Case Study of Schools Within One Midwestern State

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Abstract

High school basketball facilities have long been an integral component of athletics, physical education, and community programs, yet little scientific literature exists on these vital venues. This study assessed components of scholastic basketball venues and analyzed strengths and challenges associated with these facilities. An electronic survey was sent to all boys and girls head high school basketball coaches in a Midwestern state within the United States. This study analyzed data by calculating descriptive statistics for a number of facility components. Content analysis revealed that Condition and Design were perceived as strengths associated with the scholastic basketball facilities, while Ancillary Areas and Equipment were challenges. Future research should expand this methodology to regional and national populations.

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Secondary schools in the United States spend millions of dollars annually on maintaining or constructing athletic facilities. Whether adding a state-of-the-art football stadium, a multipurpose gymnasium, or strength and conditioning training facility, high school administrators are mimicking leaders at the intercollegiate and professional sport levels by adding these venues to their secondary school campuses. As Wilson (2013) indicated, a secondary school is more than the sum of its buildings; the venues that make up a high school campus are inevitably linked with the institution's mission. Athletic and physical education facilities are no different in this connection to institutional missions, as they facilitate the implementation of objectives set by community leaders, administrators, and coaches regarding the student-athletes within the school.

While these facilities are designed and constructed primarily to support interscholastic athletics, operation of these venues is also intended to support other academic, programmatic, and special-event-related activities. This requires consideration of several managerial components, such as scheduling, equipment inventory, maintenance, finance, legal issues, security, and risk management, to name a few. Anecdotal evidence suggests that serving these varied aims presents challenges for leaders working at the secondary school level, yet no known resources exist within the sports management and physical education literature to provide context to athletic administrators and coaches interested in making evidence-based decisions at their respective schools.

High school athletic departments have widely modernized or renovated existing facilities in recent years with an emphasis on efficiency, security, and promotion of school spirit or corporate sponsorship ("New Trends," 2016). Typically, facility features within a high school that support a scholastic basketball program include, but are not limited to, locker rooms, meeting spaces, offices, accommodations for maintenance and equipment storage, and athletic training areas. Sawyer and Gimbert (2013) noted that administrators should make long-range planning imperative to provide for the logical and most economical use of the venue, and arguably such decisions may be best assisted when decision makers are armed with greater knowledge of the spectrum of facilities available in contemporary high schools.

Toward such an aim of providing context of existing facilities in interscholastic athletics, Petersen (2013) analyzed space guidelines within indoor high school athletic facilities and established benchmarks for planning or renovating scholastic venues. Petersen concluded that it is vital for schools to establish guidelines and noted that inadequate space for athletic programs hinders the effective operation of the athletic programs and the students they serve. Hoffman (2015) reported similarly on the effect that corporate sponsorships have on scholastic sport venues. Recent examples (Cook, 2012; Coyne, 2016; Stewart, 2012) demonstrate the increasing significance of the corporate sponsorship trend in interscholastic athletics, as long-term contractual agreements with corporate entities are increasingly helping to fund, operate, and maintain facilities in secondary school settings (Neddenriep, 2016). These developments in interscholastic sports suggest that scholarly analysis of such trends in scholastic athletics is warranted.

Within the United States, the more than 23,000 high school athletic departments employ approximately 300,000 administrators, coaches, and officials in related roles (Forsyth & Olson, 2013). Additionally, the National Federation of State High School Associations (2016) noted that more than 7.8 million students participate in interscholastic competitions annually. These statistics make it important for athletic departments to designate proper attention to the facility aspect of the program. As scholastic sport facilities can potentially be a difference-maker in the overall success of an athletic program, administrators and coaches must continually evaluate their respective venues to maintain a level of competitiveness with their counterparts.

There is a shortage of literature related to secondary school venues and to high school basketball gymnasiums in particular. Such gaps in the literature warrant further study of interscholastic sports facilities.

Thus, this study assessed components of and various procedures employed in the sports administration of high school basketball facilities. This exploratory study produced descriptive data to answer research questions regarding (1) the basic components of and procedures used in the administration of high school basketball facilities, and (2) the perceived strengths and challenges associated with the administration of high school basketball facilities.

As conveyed, the literature shows few accounts of scholastic basketball venues, compared to the intercollegiate and professional sport sectors. Therefore, this study aimed to add to the scholarly literature on this topic.

Method

This section gives an overview of the research design, context, participants, instrument, and procedures used in this study. Additionally, it explains the data analysis techniques used.

Research Design

This study targeted high school basketball coaches within a state athletic association, selected out of convenience, and it employed both quantitative and qualitative research methods. The study used quantitative methods to gather statistical information on the data collected. The main purpose of descriptive statistics was to reduce the data to simpler and more understandable forms without distorting or losing much information (Agresti & Finlay, 2009). Qualitative methods were used on open-ended questions administered within the survey. These questions allowed respondents to describe the perceived strengths and challenges of leading the basketball program within their respective scholastic basketball facility.

Research Context

This study focused on high school basketball programs in the state of South Dakota, specifically members of the South Dakota High School Activities Association (SDHSAA). The SDHSAA (2016) serves member schools by providing leadership in the development, supervision, and conduct of interscholastic activities that enrich the educational experiences of high school students. The SDHSAA is committed to the ideals that provide equitable participation opportunities and positive recognition to students, and to working cooperatively with all schools to enhance the achievement of desired educational goals (SDHSAA, 2016).

Participants

Through purposive sampling, 326 basketball coaches in South Dakota were sent the electronic survey for the study. All participants were head basketball coaches for boys and girls programs of

SDHSAA member institutions. Participant contact information was acquired from the association's website. Head coaches were specifically chosen for the study because of their inherent knowledge of their respective basketball program.

Instrument

Because no existing instruments were relative to the specific purpose of this study, a new one was developed. The Western Kentucky University Scholastic Basketball Survey was created in consultation with professionals knowledgeable in the areas of scholastic basketball, coaching, and facility management. As recommended by Dillman (2007), the professionals thoroughly reviewed the survey questions and provided feedback, giving face validity to the construction of this instrument. The survey was structured to collect data on an array of components related to the administration of a high school basketball program, inclusive of facility features, operational practices, and coaches' perceptions of venue strengths and challenges. This study used Cronbach's alpha, calculated as .711, to further assess the instrument for validity; Pearson's correlation coefficient was calculated on 20 questions randomly selected from the survey, resulting in a test–retest value of $r = .63$.

Procedures

The Institutional Review Board at Western Kentucky University reviewed and approved this study. All required protocols were precisely followed throughout the study.

Several specific procedures were used during the data collection phase of the study. The electronic survey was developed and distributed via the online research suite Qualtrics (Provo, UT, USA). The link to the survey was sent to all boys and girls head basketball coaches within SDHSAA member institutions. To facilitate a higher response rate, the researchers sent all participants electronic correspondence regarding (a) an invitation e-mail with an explanation of the purpose of the study, (b) an implied informed consent, and (c) detailed instructions on how to complete and submit the survey. Two weeks after launch, a reminder e-mail was sent to participants who had not completed the survey.

An incentive was offered to participants as an additional measure of obtaining a higher response rate. Participants completing the survey were given the opportunity to be entered into a random drawing to win a $250 monetary donation to their basketball program.

Data Analysis

Quantitative survey data were analyzed using the computer software programs Microsoft Excel (Microsoft, Redmond, WA, USA) and IBM SPSS Statistics 21 (IBM SPSS, Armonk, NY, USA). These data analysis and subsequent reporting tools attempted to reduce the data to simpler and more understandable forms without distorting or losing important information (Agresti & Finlay, 2009). The open-ended questions were analyzed and categorized via a content analysis technique. As suggested by Bogdan and Biklen (2007), themes and patterns were identified and categories were developed that helped bring meaning to the study. Content analysis allowed for (1) the counting of instances to define frequency and (2) the creating of codes to define categories, essentially quantifying participant feedback.

Results

Responses were returned by 79 coaches from all over the state of South Dakota, for a response rate of 24%. The average student enrollment from respondent schools was approximately 375 students, with the maximum enrollment being in the 2,000–2,249 range. The majority (86%) of respondent schools were classified as public institutions.

Research Question 1

The first research question to be addressed was, what are the components of and procedures used in management of high school basketball facilities? To provide a synopsis of venue components and protocols, the researchers calculated descriptive statistics in the form of frequency distributions and percentages. Table 1 displays a summary of results.

Table 1
Summary of Scholastic Basketball Facility Components and Procedures

Component	*n*	%
Facility Age (in years)		
0–5	4	5
6–10	10	13
11–15	5	6
16–20	6	8
21–25	8	10
26+	35	44
Not Sure	11	14
Seating Capacity		
0–1,999	61	77
2,000–3,999	12	15
4,000–5,999	2	3
6,000–7,999	2	3
8,000+	1	1
Not Sure	1	1
Head Coach Office		
Yes	43	54
No	36	46
Dedicated Locker Room		
Yes	25	32
No	54	68
Exclusive Meeting Space		
Yes	26	33
No	53	67
Shares Venue With Other School Teams		
Yes	75	95
No	4	5
Facility Scheduler		
Athletic Director	75	95
Administrative Assistant	3	4
Principal/Assistant Principal	1	1
Maintenance Responsibility		
Athletic Director	19	24
Coach	3	4
Maintenance Division	51	64
Outside Contractor	1	1
Other	2	3
Not Sure	3	4

Scholastic basketball facility components and procedures assessed from the survey included (a) age, (b) seating capacity, (c) office for head coach, (d) dedicated locker room, (e) exclusive meeting space, (f) sharing of venue with other school athletic teams, (g) individual charged with scheduling the facility, and (h) maintenance oversight responsibility.

As Table 1 shows, basketball facilities in the 26 years or older range comprised the most responses in the age category. Regarding seating capacity, the range most reported by the respondents was 0–1,999, with 77% signifying their basketball venue fell into that capacity bracket. Slightly more than half (54%) of respondents reported that the venue included an office for the head basketball coach. The majority (68%) of respondents indicated that they did not have dedicated locker areas or an exclusive meeting room space within the facility.

Regarding policy and procedural variables, a majority (95%) of respondents conveyed that their basketball venue was shared with other athletic teams within the institution. Concerning facility scheduling, 95% of respondents noted that the school's athletic director managed the reservations for the venue. Finally, the results show that primarily, the institution's maintenance division (i.e., physical plant or custodial staff) performed maintenance duties and functions.

Research Question 2

The second research question that this study sought to answer was, what are perceived strengths and challenges associated with the high school basketball facility? Participants supplied 205 comments relative to this question. Regarding strengths of the venue, participants provided 112 comments that led to the emergence of five categories after the content analysis: (1) Condition, (2) Design, (3) Facility Components, (4) Atmosphere, and (5) Age.

Relative to challenges, participants furnished 93 comments. Five categories were developed from the content analysis: (1) Ancillary/Specialty Areas, (2) Equipment, (3) Size, (4) Sharing, and (5) Maintenance. Table 2 summarizes the comments of coaches' perceived strengths and challenges of their basketball facility, showing a breakdown of categories and themes that emerged.

Table 2
Content Analysis of Perceived Basketball Facility Strengths and Challenges

Category	Theme	Responses *n*
	Strengths	
Overall Condition	Adequacy/satisfaction	18
	Aesthetics	9
	Operations	6
Design	Functionality	15
	Seating capacity	10
	Efficiency/space utilization	4
Facility Components	Hardwood flooring	12
	Multiple basketball goal systems	10
	Seating options	4
Atmosphere	Strong home court advantage	11
	Character/mystique	5
Age	New	8
	Challenges	
Ancillary Areas	Lack of locker rooms	12
	Lack of weight room	11
	Lack of auxiliary gym	3
Facility Equipment	Technology needs	9
	Bleacher considerations	6
	Miscellaneous	6
Size	Too small	10
	Inefficiency	5
	Limited seating	3
Sharing	Sharing with other school sports	7
	Sharing with community	5
	Lack of access	4
Maintenance	Lack of daily upkeep	6
	Air conditioning needs	3
	Lighting needs/concerns	3

Regarding facility strengths, the category that received the most responses was Condition (n = 33). This category consisted of responses related to the overall condition of the facility. Themes that emerged from this category were general satisfaction of the venue, aesthetics, and operational practices. Brief comments such as "beautiful gym" and "venue is in great shape" made up the majority of responses. Comments directed toward Design (n = 29) made up the category with the second most responses. Themes within this category included venue functionality, suitable seating capacity, and maximum use of overall space. One coach offered, "Our basketball facility is connected to the high school, contains one full court, two smaller courts, and six baskets. This allows for better practices and game preparation." Responses regarding good flooring, multiple basketball goal systems, and the variety of seating options made up the Facility Components (n = 26) category. Responses in this category were geared toward tangible fixtures and equipment within the facility. The Atmosphere (n = 16) category emerged from themes associated with the facility providing a strong home-court advantage and the overall character represented by the venue. "Intimidating place" and "history" were commonly cited aspects of the facility's aura and environment. A participant remarked,"We have a great venue and it is a very intimidating place to play, giving us an advantage in our conference." Finally, comments regarding Age (n = 8) rounded out the responses relative to perceived strengths of high school basketball facilities. Each response in this category indicated the facility being "new" was a strength.

Concerning perceived facility challenges, the category that developed as having the most comments was Ancillary Areas (n = 26). Responses in this category referred to areas within the facility that are typically considered secondary or subsidiary. Comments such as "lack of" or "need for" locker rooms, a weight training area, and auxiliary space made up the majority of responses. In reference to ancillary areas being a burden to the program, one coach asserted, "A weakness of our facility is the lack of a weight room. Also, we have to split practices by traveling to another local gym. I believe issues like these are why fewer kids are coming out for the sport."

The Facility Equipment (n = 21) category accounted for the second most responses. Themes that formed within this category

concerned equipment needs such as outdated scoreboards, sound system upgrades, better bleacher options, and other miscellaneous equipment challenges. Comments such as "too small" and responses indicating inefficiency made up the Size (n = 18) category. One coach, noting venue size as a limitation, concluded,"Our facility is simply not adequate for a varsity basketball program, and with it being so small, we have no shot at hosting a tournament."

The Sharing (n = 16) category emerged from themes connected with splitting venue time with other school athletic teams and community programs. Some respondents specifically referenced "limited access" to their respective basketball facility. Finally, comments regarding Maintenance (n = 12) concluded the responses concerning perceived challenges of high school basketball facilities. Themes within this category included the lack of daily upkeep and replacement, needs, or concerns with critical building components. One coach revealed,"Our gym lighting is poor and it needs air conditioning. Our maintenance needs are not being heard."

Discussion

This study assessed components of the administration of scholastic basketball facilities. By assessing perceived venue strengths and challenges, the study summarized key facility components, as well as protocols employed in the management of venues. The many responses submitted by a relatively small number of participants show the interest in the topic and the potential effect that the basketball facility can have on a variety of elements within a scholastic athletic program. The results suggest that high school basketball coaches feel that overall condition and facility design are the biggest strengths of their respective facilities. Condition of the facility includes, but is not limited to, adequacy based on the scope of the program, aesthetics, and operational practices. Facility design includes space utilization, functionality, and efficiency.

Coaches' level of involvement and input in the facility planning and design stages of the basketball venue are unknown and are an important consideration for further research. Seidler and Goldfine (2013) suggested that facilities are often planned without in-depth consideration of the programs that they will support.

Surprisingly, nearly half (44%) of the respondents indicated that their basketball facility is 26 years old or older. Perhaps some of

these older facilities have been renovated, or school systems could be fiscally challenged and therefore building new is not an option. Evaluating the advantages and disadvantages of renovating an older facility requires expertise, a feasibility study, and evaluation of key questions regarding the athletic department, particularly the basketball program.

Implications

Key implications for scholastic athletic administrators and coaches can be derived from this study. These implications include (a) the importance of foundational data, (b) facility design considerations, and (c) professional development opportunities for coaches.

This study provides foundational data that can be used by administrators and coaches in the scholastic sport industry. The results provide a depiction of high school basketball facility components, procedures, and perceived strengths and challenges in one Midwestern state. Facility planners or facility managers can use this study to compare their program with these findings. The results specific to facility strengths and challenges can be particularly beneficial to those planning a new high school basketball facility, as findings can reinforce venue planning ideas and potentially help planners to avoid mistakes and oversights that will greatly affect the program.

The effect of proper facility planning and design cannot be overlooked. As noted, results show that coaches deem overall design as a strength to their basketball facility. The level of involvement that participants had in planning and design phase of their venue is unknown, but the findings from this study show that input from the basketball coach should be considered. Having representation from the head basketball coach on the master plan and/or design team committee can aid in the identification of the institution's goals and objectives for a new facility. Involving the coach or physical education teacher in any site visits, if feasible, to other well-designed scholastic venues could be impactful and should be considered as a way of maximizing planning efforts.

A final implication is that scholastic basketball coaches need to be involved in planning and management decisions, as they are one of the primary tenants and stakeholders in the venue. With this notion, coaches should be receptive to and prepared for this secondary duty. Professional associations, such as the National

Interscholastic Athletic Administrators Association (NIAAA), provide educational and leadership opportunities, including courses in facility and equipment management, for individuals who work in scholastic sports. Additionally, professional associations, state high school athletic associations, and undergrad sports administration programs offer conferences or courses that showcase the latest trends in facility planning and equipment management.

Limitations

The survey instrument for this study was administered electronically. This format may have posed challenges for some participants. Additionally, the self-report format of the survey may have led to somewhat skewed data, because respondents may not have returned accurate responses. However, the test–retest analysis conducted on this survey suggests that reasonable confidence may be placed on these results relative to the high school basketball facilities in this Midwestern state.

Another limitation of the study was the relatively low number of participants. This was an exploratory study consisting of high school basketball coaches only in the state of South Dakota, which may be further compounded by the fact that South Dakota is a state with one of the lowest population densities in the United States. Thus, readers are cautioned against generalizing these findings to other states or geographic regions within the United States. In sum, these findings lack the potency that a multistate study could seemingly produce.

Recommendations for Further Research

This study warrants further research on scholastic basketball facilities. Because this study centered on one state, South Dakota, an obvious direction for future research is an expansion to multiple states. Widening the study to collect data and perceptions from a larger participant base could conceivably lead to more meaningful and representative results. In addition to expanding the study to multiple states, future inquiries on the topic could include athletic directors. Gaining insights from an athletic director's perspective could be impactful, as this study only collected basketball head coaches' perceptions.

Another area of future research to be considered is an assessment of recent trends and innovations in high school athletic facilities.

With the seemingly limited amount of literature on the topic, an assessment of trends in scholastic equipment, facility planning, design, and management is needed.

Finally, a research project similar in scope to this one could focus on intercollegiate athletic basketball arenas. Aside from collecting coaches' perceptions of basketball arena strengths and challenges, such a study could obtain data to summarize a variety of factors in which the venue impacts the basketball program. Specifically, a study of the level of influence that athletic facilities have on the recruitment and decision-making process of prospective student-athletes could benefit college coaches, athletic directors, and those responsible for key facility initiatives on campus.

Conclusion

This study contributed to the literature in physical education, sport administration, and specifically the administration of sports facilities on the scholastic level. This study documented the perceived strengths and challenges associated with administration of high school basketball facilities in one Midwestern state. In addition, it described the primary components and various procedures employed in these venues. Interscholastic athletic directors and coaches may find value in the results due to their unique relationship with the topic. Similarly, given the little existing literature on interscholastic sports, scholars working in this area may discover meaning in these findings given the light they shed on this topic.

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