

International Comparative Analysis of Time-out Decision Making Strategies Employed by Male University Basketball Coaches

大學男子籃球隊教練請求暫停考慮因素的跨國比較分析

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Abstract

The purpose of this study was to do a comparative analysis of the critical coaching interventions surrounding the use of timeouts employed by male university coaches. Little examination of such game related coaching decision making as a measure of coaching effectiveness has been conducted, particularly at the international level. Fifty-five male coaches of men's university basketball teams from four different countries (Canada, Hong Kong, South Korea, Taiwan) were analyzed using a questionnaire consisting of demographic questions and a specific six-factor, 26-item timeout questionnaire. Analysis of variance with Scheffe post hoc multiple comparisons was used to examine the results. The findings were: 1. Canadian and South Korean coaches were older and more experienced than coaches from the other countries with Canadian coaches holding more formal certification qualifications. 2. Age, experience and qualifications, however, made no statistically significant difference to the overall results. 3. The "physical" factor was the most common reason for calling timeouts with Hong Kong coaches using this reason most often. 4. The "emotional" factor was the least used reason for calling timeouts for Canadian coaches but was used most often by Korean coaches. 5. Canadian coaches were less likely to use timeouts while Korean coaches were most likely. Canada and Taiwan scored consistently higher than Hong Kong and South Korean coaches and were more similar in their emphasis on all factors. The results suggest a clear difference in the approach to timeout decision making among the coaches from the four countries with the Canadian strategy being consistently different than the other countries of Hong Kong, Taiwan and especially South Korea. The highest emphasis on "physical" factor indicated the importance of using timeouts as a means of controlling team fatigue and energy expenditure.

Key words: Timeouts, Basketball Decision Making, University Basketball Coaches

摘要

本研究之目的在於分析大學男子籃球教練在使用暫停的關鍵抉擇。以往較少研究使用比賽中教練的決定去分析教練的教授成效，本問卷以六種決策方式，分26項來分析四個國家（加拿大、香港、南韓及台灣）的大學男子籃球隊教練的決策因素，並分析跨國的異同關係。研究指出：一、加拿大及南韓的教練年齡較長、經驗較深，而加拿大教練具有較多正規的證書資格。二、年齡、經驗及資格與決定因素並無明顯的相關。三、香港教練較常以體能因素去請求暫停。四、加拿大教練較少以心理因素去請求暫停，而反之南韓教練則較多。五、加拿大教練較少請求暫停而南韓教練則較多。而在整體因素方面，加拿大及台灣教練的取向相似並較香港及南韓教練為高。結果指出加拿大教練在請求暫停的決定方面與其他國家有明顯的分別，以南韓為甚。體能因素備受重視則引出暫停用作控制球隊疲累及能量消耗問題的重要性。

Introduction

Background to the Study

The intention of this study was to examine the critical coaching interventions surrounding the use of timeouts as one crucial variable related to coaching effectiveness. The use of such game related coaching interventions has had limited examination and very little is known about the extent to which these administrative aspects of coaching are effective. This is particularly true when comparing the use of such timeout interventions on an international level.

The timeout is a crucial variable in many sports such as volleyball, ice hockey, American football and basketball. Boutmans and Swillen (1991) investigated the influence of the timeout on the score of the team that called it and determined that it had a positive influence. Duke and Corlett (1992) examined the factors which influence a coach's decision to call a timeout and found that coaching experience, gender, and team success influenced timeout decision making. Kozar et al. (1993) however, determined that the calling of a timeout before an opponent took free throws late in matches had no significant effect in reducing free-throw percentages.

International Focus

Comparative studies on timeout decision-making strategies at an international level are not available with only the paper by Lin (2002) which used basketball coaches from Taiwan providing any specific data of a non-western nature. His findings indicated no significant differences between any of the six factors related to timeout decision making although the strategy factor was the most favored response.

Since there is such little information of an international nature on the characteristics of basketball coaches a variety of demographic measures were also collected in an attempt to provide a comparative profile of a University basketball coach in the four countries of Canada, Hong Kong, South Korea and Taiwan. These characteristics included age, marital status, University level basketball coaching experience, total years of basketball coaching experience and specific basketball coaching certification qualifications.

Basketball is a truly international sport being played by over 211 countries world wide and second only to volleyball in terms of the number of world sports governing bodies (FIBA, 2002). This international focus and the huge growth and interest in basketball, particularly in Asia, provides a unique opportunity to examine coaching intervention strategies and

the extent to which they are used differentially. While sample size was a limiting factor and the timeout rule differences between Canada (NCAA) and the other countries (FIBA) provide for possible differences in interpretation, this study represents a unique opportunity to analyze coaching strategy on an international level.

Methodology

Subjects

The subjects for this study were fifty-five coaches of male university basketball teams from four different countries (Canada, Hong Kong, South Korea, Taiwan). See Table 1. All coaches were the head coaches of their respective male university teams. The university level is considered to be the highest level of competition within the educational system in all four countries.

Table 1. Sample Size by Country.

Canada	15
Hong Kong	11
South Korea	18
Taiwan	11
Total:	55

Rules

Canada follows NCAA rules that for the purposes of timeouts consist of four full timeouts (60-seconds) plus two 30-second timeouts in two, 20-minute halves. These timeouts can be used at any time during the game and the unused 30-second timeouts can carry over into overtime where one additional 30-second timeout is added. Hong Kong, South Korea and Taiwan use FIBA rules which limit timeouts to one 60-second timeout in each of the first three 10 minute periods, and two 60-second timeouts in the fourth 10 minute period. Unused timeouts do not carry over into overtime where one 60-second timeout is added.

Procedures and Instrumentation

All subjects were analyzed using a series of demographic questions and a specific six factor, 26 items timeout questionnaire (Duke & Corlett, 1992). The subjects were given the questionnaires by the researchers during the period May-June 2001. Analysis was completed during the 2002 year. The demographic data collected included, age, marital status, University level coaching basketball coaching experience, total years of basketball coaching experience and specific basketball coaching certification.

The 26 item timeout questionnaire was developed by Duke and Corlett (1992) and each of the six factors was interpretable by four questions, representing the following constructs:

1. Offensive game events
2. Defensive game events
3. The attentional state of the players
4. The emotional state of the players
5. The physical state of the players
6. Strategy

Design

Six one-way ANOVA's were used to test for possible significant statistical differences among the mean scores of the six factors using a Bonferroni adjustment (Huberty & Morris, 1989). Scheffe post-hoc analysis was undertaken on each significant treatment effect to determine which factors were significantly different from the others. The level of significance used for all numerical analysis was .05.

Results and Discussions

Demographic Analysis

Age

There was no significant difference in the ages of the coaches when analyzed by country. There was no significant difference in the ages of the coaches when analyzed by country. However, Canadian coaches were oldest on average with Korea, Taiwan and Hong Kong coaches being progressively younger.

Figure 1. Age Distribution by Country.

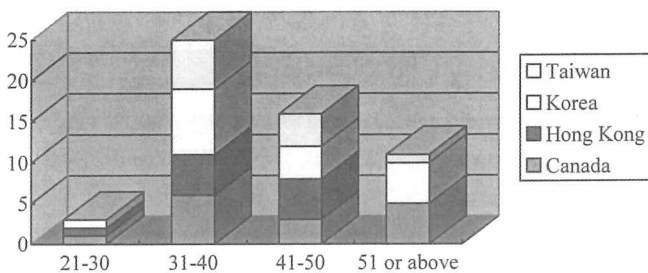
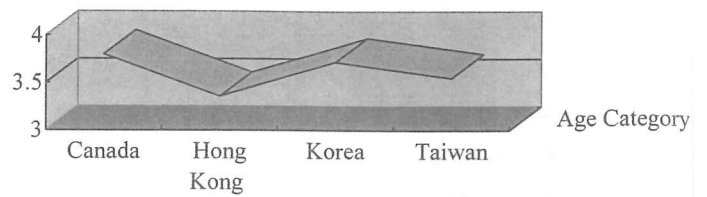


Figure 2. Mean Category of Age.



Korean coaches (13 coaches with over 16 years of coaching) indicated the highest mean category of total basketball coaching experience with Canadian coaches very similar and only slightly lower. Hong Kong and Taiwan were both considerably lower in total basketball coaching experience.

Figure 3. Coaching Experience by Country.

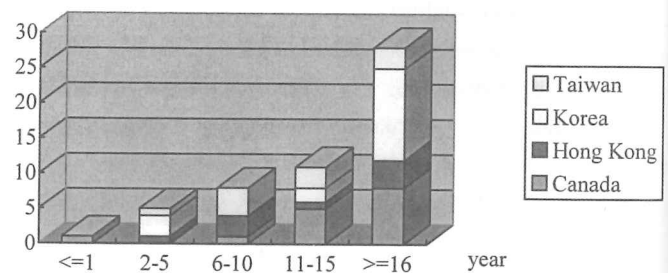
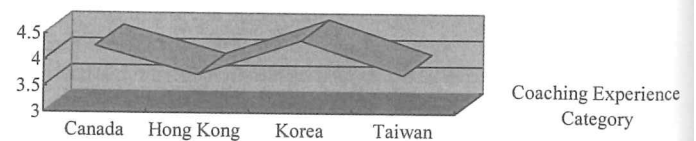


Figure 4. Mean Category of Coaching Experience.



Basketball Coaching Certification Qualifications

Canadian Coaches had the highest mean level of basketball coaching certification (10 of 15 coaches held Level 3 certification). Hong Kong also had a high mean level with Taiwan and particularly Korean coaches holding much lower coaching certification. Both Canada and Hong Kong held significantly higher qualifications than the Koreans ($p < 0.05$).

Figure 5. Coaching Qualification by Country

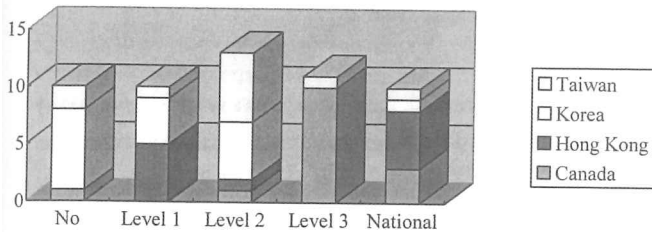
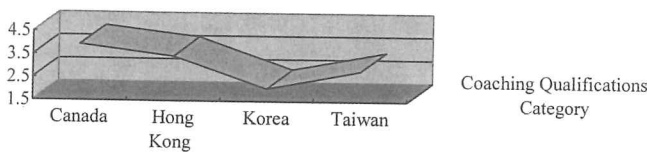


Figure 6. Mean Category of Coaching Qualifications



Discussions

Demographic Data

The Canadian and Korean coaches were oldest with almost a third of their coaches being over the age of 50. Hong Kong and Taiwan had much younger coaches (with Hong Kong having the lowest mean category) although no statistically significant differences by country were observed. Only three of the total coaching sample were under the age of 30. Both Canadian and Korean coaches showed similar and higher marital status over their younger Taiwan and Hong Kong coaches.

Both Canadian and Korean coaches had considerably more total basketball coaching experience than either their Hong Kong or Taiwan counterparts. On the other hand, Canadian and Taiwanese coaches appeared to have more university coaching experience than either Hong Kong or Korea.

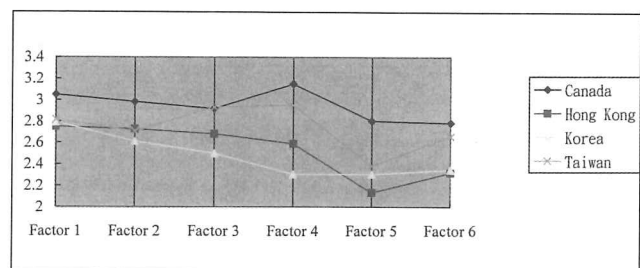
Canadian and Hong Kong coaches had much higher levels of coaching certification qualifications than both Taiwan and especially Korea. It appears that coaching certification is a much higher priority in Canada and Hong Kong.

Timeout Questionnaire Analysis and 1992 Discussion

Comparisons using six one-way ANOVA's for the six factors identified by Duke & Corlett (1992) as contributing significantly to the coaches decision to call a time out resulted in almost no significant differences ($p < .05$) by country, coaching experience or coaching certification. The only statistically significant difference accounted for in this study was between Canada and Korea on factor 4 ("emotional state of players"). The data did show however, a consistent pattern over all six factors, namely that Canada and Taiwan scored higher than Korea and Hong Kong. This is an indication that Canada in particular was less likely to call a time-out for any of the six factors than any of the other countries while Korea was most likely to do so.

The "physical state" reason was the most common reason for calling timeouts with Hong Kong coaches using this reason most often. Canada appeared least likely to call a timeout for "emotional reasons" while the other countries were less likely to call a timeout for "offensive game events". Canada on the other hand was most likely to call a timeout for "strategy" reasons.

Figure 7. Mean Factor Scores by Country.



In general it appears that there is a clear difference (not statistically significant) in the approach to timeout decision-making between the countries participating in this study. This is particularly evident in the Canadian strategy being consistently different from the other countries of Hong Kong, Taiwan and especially Korea.

Conclusion

The results of this study continue to confirm many of the somewhat surprising findings of Duke and Corlett (1992) and Lin (2002) which did not show any significant differences in the use of timeouts due to coaching experience. Clearly other intervening variables such as team success, player ability, educational background and personal experience may play more important roles in this area. Coaching experience may play a more important role in other areas of coaching such as team strategy, motivation or physical preparation.

There are a number of interesting coaching profile differences which although not statistically significant do provide for speculation. Canadian and South Korean coaches were most similar in terms of age, marital status and coaching experience yet most different in terms of coaching certification qualifications and reasons for calling timeouts. Canada and Hong Kong coaches had much higher degrees of coaching certification than South Korean and Taiwan coaches, which may be due to an increased emphasis on formal coaching certification in these countries. Canadian coaches were generally older; more experienced and had higher coaching certification qualifications than the Asian counterparts. This may be due to the full time nature of their university coaching roles as well as the more established nature of coaching as a profession in Canada.

While the results of this study provide for additional information on the role of administrative decision-making in coaching and the importance of timeout interventions, it is clear that further studies are needed to clarify the extent to which these interventions are important and ways in which they can be used most effectively. The rule differences used by the sample countries may have an effect on the reasons for selecting any of the six-timeout factors and the relatively small sample size made it very difficult to get statistical significance. Additionally, it is necessary to try to determine whether what the coaches say they do is actually what they do. Further study is warranted to clarify these concerns.

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