

ADVANCE

BADMINTON COACHING EDUCATION TRAINING NEEDS ANALYSIS



ADVANCE



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Introduction

Coaches are considered as key persons in every sports training environment. This is the case no matter if you are involved in a grass root or high-performance environment. The coaches cater for shaping the environment and develop the athletes in areas from sports specific skills to personal growth, set vision and goals for the players' development and the training environment etc. Besides having a talent and desire for coaching, every coach needs a solid and extensive coach education as foundation to become a great coach. Badminton coaching is no different.

The development of an ADVANCE Badminton Coaching Education at a European level stems from a need and an identified gap in badminton coaching. The main aim of the ADVANCE project is in fact to advance and further develop the skills of badminton coaches at a European level. By developing a European Badminton Coaching Framework, an ADVANCE Badminton Coaching Education and European Badminton Coaching Education Platform (Online Tool) the ADVANCE project will ensure that as many coaches across Europe will have access to an advanced badminton coaching education.

The first step on the journey to develop an ADVANCE Badminton Coaching Education is to make research to better understand how such an education based on blended learning can be constructed. Six analyses will be conducted to receive information from various stakeholders who can provide with insightful and perspectives to the development of a successful European Badminton Coaching Framework and ADVANCE Badminton Coaching Education. Below you find a short introduction to each of the 6 analyses.

Analysis 1: Mapping of the coaching education in Europe

The development level of Badminton Europe's 54 Members is very different, which also seems to reflect the way the Members are working with badminton coaching education. The most developed countries have their own Badminton Coach Education programmes, where they have delivered the education for more years. The less developed countries are using the international courses delivered by Badminton Europe in cooperation with Badminton World Federation. However, it is important to get a deeper understanding of the situation in Europe in order to develop and implement a European Badminton Coaching Framework and to fit in the ADVANCE Badminton Coaching Education.

A mapping analysis will be conducted to get a clear overview of the European badminton coaching education situation, which also covers which countries are willing and able to implement the ADVANCE European Badminton Coaching Framework.

Analysis 2: Quantitative analysis of top nations badminton coaching education systems

The European top nations in badminton have developed their own badminton coaching education systems for years. These systems have educated many good coaches who have contributed to the development of badminton in their countries. Unfortunately, these educations are not accessible to all coaches across Europe and if they were, many coaches would find it hard to follow the education programme as it would not be delivered in their native language. However, the more information that can be obtained from the top nations badminton coaching education systems and added to Advanced Badminton Coaching Education, the more coaches across Europe will benefit from it.

By conducting a quantitative analysis of the top nations badminton coaching education system, it will be possible to get a clear direction of the priorities and time to be allocated to each of the subjects for the ADVANCE Badminton Coaching Education.

Analysis 3: Interviews with badminton coach education managers from top nations

The badminton coach education managers from the top nations possess great experience and knowledge of the best practices of their respective coach education system. They have been involved in setting up the education structure, delivered many courses and educated many coaches. Besides best practices they also know which challenges might occur when educating coaches. The badminton coach education managers will be able to provide us with valuable insight to how mentoring programme, virtual education and dual career can be implemented to the ADVANCE Badminton Coaching Education.

Interviews with coach education managers will add a qualitative aspect to the quantitative analysis of the top nations badminton coaching education system. Explanations and understanding of how the top nations have built their coach education programmes will add that extra value in the construction of the ADVANCE Badminton Coaching Education.

Analysis 4: Badminton coaching education – view from European badminton coaches

Coaches who already completed a badminton coach education and are involved with coaching on different level possess important knowledge and experience of both what is required/needed to coach on the specific level combined with what they were missing during their education to be able to perform as coach on that level. The badminton coach education programme will be focusing on blended learning and as virtual learning is not naturally implemented into all badminton coaching education programmes, it is important to get a deeper understanding of which opportunities the coaches see through virtual learning.

The project will also develop an ADVANCE European Badminton Coaching Education Platform (Online Tool) which shall both serve as the online platform for the coaches attending the ADVANCE Badminton Coaching Education, but also as an educational and inspirational platform for badminton coaches across Europe.

An analysis will be based on a questionnaire which has been answered by a large group of coaches with a different level of badminton education background.

Analysis 5: Dual career - Interviews with current and former top players

Top players who have been involved in badminton all their life are important persons to keep in the badminton world. The players are getting through an extensive badminton education as players, where they have experienced the challenges of learning and trying to add new elements into their game. They also possess an extraordinary feeling of the game, which is hard to learn through an education. Theoretical insight to training and coaching will however enable the top players to contextualize their experience and know-how from their playing career. Instead of using the approach: “Do as I did – it worked for me and will therefore also work for you”, the coaches will be able to reflect on their own coaching praxis and develop their coaching skills through a badminton coaching education. A development that will allow them to help many different players.

The difficulties for players are getting a badminton coaching education while still being active as players due to a busy training and tournament calendar. In order to keep the players in the badminton world, the coaching education programmes need to be flexible in more ways to accommodate the busy schedule. By interviewing current and former top players who are considering or already have made the transition from player to coach, we will get first-hand information on the requirements needed for players to take part in a badminton coaching education while still being actively playing.

Analysis 6: Dual career - Interviews with education managers from 5 other sports

The dual career focus for athletes is also a focus in other sports. Every sport has similarities and differences in the approach of getting top players involved in a coaching education. The goal is to include as many of the best practices from other sports in the construction of the ADVANCE Badminton Coaching Education as it will increase the possibility of even more top players taking a badminton coaching education.

Interviews with education managers from three other sports will provide with information about best practices for implementing dual career aspects for top players in the ADVANCE Badminton Coaching Education.

The outcome of the six analyses will be compiled in the final part of the report and be presented as recommendations for anyone interested in creating and designing an ambitious badminton coach education with a duration of several months like the ADVANCE Badminton Coach Education.

Thanks for reading the report.

The ADVANCE project team.

Analysis 1: Mapping of the coaching education in Europe

Introduction

Highly qualified badminton coaches are key personnel for a country to grow the sport of badminton quantitatively but also to develop talents into international top players. An initial analysis showed a very diverse picture of the badminton coach education systems among the Badminton Europe Confederation (BEC)'s Members.

An in-depth mapping analysis is needed to better understand badminton coach education system across Europe which should cover the need and potential for implementing an advanced coach education system among the BEC Members.

Method

The mapping analysis were conducted through an online survey among the 54 Members of Badminton Europe. The survey is based on 2 types of questions:

1. yes/no questions
2. multiple-choice questions with 4 different answering options to each question

The survey questions were as follow:

- Do you have your own Coach Education System?
- Would you consider using and implement the BWF Coach Education System in your country?
- Coach education levels?
- Number of coaches educated in BWF Level 1 or similar since 2016?
- Number of coaches educated in BWF Level 2 or similar since 2016?
- Number of coaches educated in BWF Level 3 or similar since 2016?

The BWF Coach Education system are used as reference to “wanting to implement a new coach education system.” The Members of Badminton Europe are familiar with the BWF Coach Education system. If they would accept implementing such a system, it would also be fair to assume they would accept implementing a similar or stronger coach education system.

Population

The 54 Members of Badminton Europe were chosen as the population as they represent the broad range of countries in Europe from highly developed badminton countries to countries where the badminton structures are less developed. The diverse group of Members will present a very precise picture of the badminton coach education systems across Europe.

The population was also chosen as Badminton Europe has good cooperation with its Member and a high response rate to the survey could be expected.

Results

Implementation of a new coach education system

52 out of 54 BEC Members completed the survey, which gives a response rate of 96,3% and therefore is considered as very high.

Table 1 shows how many of the BEC Members, would consider implementing the BWF Coach Education system.

Consider implementing the BWF Coach Education system	Number of Members	% of total
"No" to implement BWF Coach Education system	10	19,2
"Yes" to implement BWF Coach Education system	42	80,8
Total	52	100,0

Table 1. Consider implementing the BWF Coach Education system

Having more than 4 out of 5 BEC Members considering implementing a new coach education system indicates that there is openness to a new coaching education approach. It could go as far as to say that the 42 Members believe that their current coach education system can be improved.

Additional analysis will give a clear picture of which type of Members are interested in implementing the BWF coach education system.

Table 2 shows the number of registered players who are represented by the "No" and "Yes" to implement the BWF Coach Education system.

Number of registered players represented by	Registered players (Total)	% of total
"No" to implement BWF Coach Education system (10 Members)	577522	67,0
"Yes" to implement BWF Coach Education system (42 Members)	284735	33,0
Total	862257	100,0

Table 2. Number of registered players represented by "No" or "Yes" to implement BWF coach Education system

80,8% of the BEC Members that are interested in implementing the BWF Coach Education System represents 33,0% of the total number of registered players among the BEC Members. The biggest BEC Members seem to have already existing and well-functioning coach education systems.

Table 3 confirms that 9 out of 10 BEC Members that do not want to implement the BWF Coach Education System already have their own education system.

The BEC Member who does not have its own coach education system is a small BEC Member with only 72 registered players. It must be investigated further to understand why this particular BEC

"No" to implement coach education system	Number of Members	% of total
Have their own coach education system	9	90,0
Don't have their own coach education system	1	10,0
Total	10	100,0

Table 3. "No" to implement coach education system

Member will not be interested in adapting a new coach education system, when they do not have an existing one. A possible explanation could be that the small BEC Members lack the capacity to handle a coach education system.

A more detailed view of the BEC Members who will not consider implementing the BWF Coach Education system is presented in table 4.

Member identification	Number of registered players	Consider implementing the BWF Coach Education System	Ranking based number of registered players
Member 1	190992	No	1
Member 2	187717	No	2
Member 3	93972	No	3
Member 4	51200	Yes	4
Member 5	49100	Yes	5
Member 6	43000	Yes	6
Member 7	40114	No	7
Member 8	35264	No	8
Member 9	33000	Yes	9
Member 10	16871	Yes	10
Member 11	14000	No	11
Member 12	13446	Yes	12
Member 13	13043	Yes	13
Member 14	9390	Yes	14
Member 15	8963	No	15
Member 16	7000	Yes	16
Member 17	6320	Yes	17
Member 18	6290	Yes	18
Member 19	5693	Yes	19
Member 20	4950	Yes	20
Member 21	4228	No	21
Member 22	3617	Yes	22
Member 23	2200	No	23
Member 24	1997	Yes	24
Member 25	1925	Yes	25
Member 26	1911	Yes	26
Member 27	1800	Yes	27
Member 28	1650	Yes	28
Member 29	1396	Yes	29
Member 30	1251	Yes	30
Member 31	1164	Yes	31
Member 32	1160	Yes	32
Member 33	1115	Yes	33
Member 34	1100	Yes	34
Member 35	890	Yes	35

Member 36	790	Yes	36
Member 37	739	Yes	37
Member 38	450	Yes	38
Member 39	440	Yes	39
Member 40	346	Yes	40
Member 41	280	Yes	41
Member 42	250	Yes	42
Member 43	220	Yes	43
Member 44	182	Yes	44
Member 45	175	Yes	45
Member 46	150	Yes	46
Member 47	140	Yes	47
Member 48	95	Yes	48
Member 49	93	Yes	49
Member 50	90	Yes	50
Member 51	72	No	51
Member 52	46	Yes	52

Table 4. Ranking of BEC Members considering implementing the BWF Coach education system based on the number of registered players. The “yellow” marked Members will not consider implementing the BWF Coach education system.

The data in table 4 confirms the assumption based on the data in table 2, that it is the BEC Members with the most registered players who will not consider implementing the BWF Coach education system. Moreover, it is the 3 BEC Members with the most registered players and 6 out of the 11 largest BEC Members who prefer having their own system. Table 3 showed that all these BEC Members had their own coach education system except from 1.

The BEC Members considering implementing a new coach education system

In this section data will be presented to better understand the BEC Members that would consider implementing a new coach education system.

"Yes" to implement BWF Coach Education system	Number of Members	% of total
Have their own coach education system	29	69,0
Don't have their own coach education system	13	31,0
Total	42	100,0

Table 5. "Yes" to implement BWF Coach Education system

Table 5 shows that 29 of the 42 BEC Members (69,0%) that will consider implementing the BWF Coach Education system have their own coach education system. It is surprising that so many BEC Members that already have their own system would consider adopting a new system. It could be seen as these BEC Members believe their current system could be improved. The confirmation of this assumption is not possible based on the current data.

By investigating the number of coach education levels in the existing coach education systems at the 29 BEC Members ready to implement the BWF coach education system, it is possible to understand if the positive attitude towards a new coach education system is because of few possibilities to really move their coaching skills 10ft he next level.

Table 6 shows the number of Coach Education levels in the existing coach educations systems among the 29 BEC Members ready to adopt the BWF Coach Education system.

Number of coach education levels (29 Members with own education system and open to implement BWF system)	Number of Members	% of total
0 Levels	1	3,4
1 Level	5	17,2
2 Levels	7	24,1
3 Levels or more	16	55,2
Total	29	100,0

Table 6. Number of coach education levels (29 Members with own education system and open to implement BWF system).

According 10ft he data presented in table 7 it is shoed that 55,2% 10ft he 29 BEC Members have 3 or more coach education levels in their current system. 79,3% 10ft he 29 BEC Members (24,1% + 55,2%) have 2 or more coach education levels.

Educated coaches in BEC Members considering implementing a new coach education system

Recruiting new players and retain current players is often connected to well-educated and good coaches delivering quality training. The same applies to developing players from talents into top-players. A closer look at the status of educated coaches in the 42 BEC Members considering implementing a new coach education system is shown in table 7.

Number of coaches educated in BWF Level 1 or similar since 2016	Number of Members	% of total
0	2	4,8
1-19	23	54,8
20-99	11	26,2
100 or more	6	14,3
Total	42	100,0

Table 7. Number of coaches educated in BWF Level 1 or similar since 2016 (42 Members with own education system and open to implement BWF system).

The table shows that more than 59,6% (4,8%+54,8%) of the 42 BEC Members considering implementing a new coach education system have less than 20 educated BWF Level 1 or similar since 2016. Only 6 of the Members have 100 or more BWF Level 1 or similar educated coaches since 2016.

Number of coaches educated in BWF Level 2 or similar since 2016	Number of Members	% of total
0	15	35,7
1-9	18	42,9
10-29	5	11,9
30 or more	4	9,5
Total	42	100,0

Table 8. Number of coaches educated in BWF Level 2 or similar since 2016 (42 Members with own education system and open to implement BWF system).

Table 8 shows 33 out of the 42 (78,6% = 35,7% + 42,9%) BEC Members considering implementing a new coach education system have less than 10 BWF Level 2 or similar educated coaches since 2016.

Number of coaches educated in BWF Level 3 or similar since 2016	Number of Members	% of total
0	33	78,6
1	4	9,5
2-3	3	7,1
4 or more	2	4,8
Total	42	100,0

Table 9. Number of coaches educated in BWF Level 3 or similar since 2016 (42 Members with own education system and open to implement BWF system).

Table 9 shows that 33 out of the 42 BEC Members (78,6%) considering implementing a new coach education system have no coaches with a high badminton educational background. Only 2 of the BEC Members have 4 or more coaches with a badminton educational background of BWF Level 3 or similar.

Based on the information from table 7, 8 and 9, the general picture of the number of educated coaches among the 42 BEC Members considering implementing a new coach education system shows that there is a majority of BEC Members with few educated coaches and especially with few coaches with a high-level badminton education.

Education level of coaches and number of registered players

Coaches are key persons in both recruitment and retaining players into the badminton system. The tables below clearly confirm the strong connection between well-educated coaches and the number of registered players among the 52 BEC Members answering the survey.

Number of registered players represented by	Registered players	% of total
BEC Members with 20 or more BWF Level 1 educated coaches or similar since 2016	819606	95,1
BEC Members with less than 20 BWF Level 1 educated coaches or similar since 2016	42681	4,9
Total	862287	100,0

Table 10. Number of registered players represented by BEC Members related to number of BWF Level 1 coaches or similar since 2016

Table 10 shows that having educated coaches most likely have a connection to having more registered players. 95,1% of the registered players are coming from BEC Members having 20 or more BWF Level educated coaches or similar since 2016. Despite the BWF Level 1 course being an entry level course, the increased quality in training coming from educated coaches seems to have a clear impact on the number of registered players.

Number of registered players represented by	Registered players	% of total
BEC Members with 10 or more BWF Level 2 educated coaches or similar since 2016	778679	90,3
BEC Members with less than 9 BWF Level 2 educated coaches or similar since 2016	83608	9,7
Total	862287	100,0

Table 11. Number of registered players represented by BEC Members related to number of BWF Level 2 coaches or similar since 2016

Table 11 shows a similar trend as table 10. Having coaches educated at a higher level also support the connection between well-educated coaches providing registered players. 90,3% of the registered players are coming from BEC Members with 10 or more BWF Level 2 educated coaches or similar since 2016. The lower the percentage of registered players represented by Members with 10 or more BWF Level 2 coaches or similar since 2016 (90,3%) compared to Members with 20 or more BWF Level 1 coaches or similar since 2016 (95,1%) can be explained by the fact that coaches get some years of experience before attending the next level of courses. However, more research is required to fully understand the lower percentage between the 2 levels.

Number of registered players represented by	Registered players	% of total
BEC Members with 1 or more BWF Level 3 educated coaches or similar since 2016	698437	81,0
BEC Members with 0 or more BWF Level 3 educated coaches or similar since 2016	163850	19,0
Total	862287	100,0

Table 12. Number of registered players represented by BEC Members related to number of BWF Level 2 coaches or similar since 2016

Table 12 confirms the same conclusions from table 10 and 11. The BWF Level 3 or similar coach education is the highest education level in the BWF coach education system. 81,0% of the registered players are coming from BEC Members with 1 or more BWF Level 3 educated coaches or similar since 2016. Hence, *The “yellow” marked Members have 1 or more BWF Level 3 educated coaches or similar since 2016.*

Member identification	Number of registered players	Number of coaches educated in BWF Level 3 or similar since 2016	Ranking based number of registered players
Member 1	190992	1	1
Member 2	187717	4 or more	2
Member 3	93972	4 or more	3
Member 4	51200	0	4
Member 5	49100	0	5
Member 6	43000	1	6
Member 7	40114	4 or more	7
Member 8	35264	4 or more	8
Member 9	33000	4 or more	9
Member 10	16871	2 - 3	10
Member 11	14000	4 or more	11
Member 12	13446	4 or more	12
Member 13	13043	0	13
Member 14	9390	0	14
Member 15	8963	4 or more	15
Member 16	7000	2 - 3	16
Member 17	6320	0	17
Member 18	6290	0	18
Member 19	5693	2 - 3	19
Member 20	4950	1	20
Member 21	4228	0	21
Member 22	3617	0	22
Member 23	2200	1	23
Member 24	1997	0	24
Member 25	1925	0	25
Member 26	1911	0	26
Member 27	1800	0	27
Member 28	1650	0	28
Member 29	1396	0	29
Member 30	1251	0	30
Member 31	1164	0	31
Member 32	1160	1	32
Member 33	1115	0	33
Member 34	1100	0	34
Member 35	890	0	35
Member 36	790	0	36
Member 37	739	0	37
Member 38	450	0	38
Member 39	440	0	39
Member 40	346	0	40
Member 41	280	0	41
Member 42	250	0	42

Member 43	220	0	43
Member 44	182	0	44
Member 45	175	0	45
Member 46	150	0	46
Member 47	140	0	47
Member 48	95	1	48
Member 49	93	0	49
Member 50	90	0	50
Member 51	72	0	51
Member 52	46	0	52

Table 13. Ranking of BEC Members based on the numbers of registered players connected with the number of coaches having BWF Level 3 coach education or similar since 2016.

The positive connection between well-educated coaches and the number of registered players is again shown in table 13. 10 out of 12 (83,3%) of the BEC Members with the most registered players have at least 1 or more BWF Level 3 educated coaches since 2016. This indicates that the BEC Members with the most registered players are also the BEC Member having well-educated coaches.

Discussion

A response rate of 52 out of 54 BEC Members (96,3%) of the survey is considered very high and means that the information provided in this analysis gives a very clear status of the coaching education systems across Europe.

42 out of 52 BEC Members that replied to the survey showed an interest in implementing a new coach education system. An openness among many of the BEC Members is shown towards improving their existing coach education system. It can also be understood as a big part of the BEC Members believing that more coach education is needed compared to what is already on the market. It clearly shows the potential for advanced badminton coach education programme which is being developed through the ADVANCE project.

Not surprisingly then, almost all (9 out of 10) of the BEC Member without any coach education system would be interested in implementing a new coach education system. More surprisingly it is the fact that 29 out of the 42 BEC Members that are interested in improving their coach education system have their own coach education system. It could again be understood as a general openness to always developing their own coach education system, but it can also be interpreted as they are not satisfied with their current system.

To better understand the education system among the 29 BEC Members with their coach education system and still interested in implementing a new one. It is surprising to realize that 79,3% of the 29 BEC Members have 2 or more coach education levels. Having more levels of an education system shows a pathway for the coaches to get more badminton knowledge and improving their coaching skills further. An assumption could be that the quality of the content in the current education systems is not good enough. However, the assumption cannot be confirmed by the current data.

The 42 BEC Members that are interested in implementing a new coach education system are representing only 33% of the total number of registered players. However, It is interesting that the 3 biggest BEC Member and 6 out of the 11 biggest BEC Members based on number of registered players have their own coach education and are not interested in implementing another coach education system. Having your own coach education system might not be the only way to increase the number of registered players. Well-educated seems in general to have positive impact on the number of registered players. Having 95,1% (BWF Level 1), 90,3% (BWF level 2) and 81,0% (BWF Level 3) of registered players represented by BEC Members having more educated coaches clearly indicates the importance of having educated coaches to grow the number of registered players. By having 10 out 12 (83,3%) of the BEC Members with the most registered players at least have 1 or more BWF Level 3 educated coaches since 2016 shows that the most developed BEC Members measured on the number of registered players understand the importance of coach education. However, parameters like finance, court availability, club structure etc. Surely play a big part as well in growing the sport. Investigating these topics are without scope of this research. But quality training from well-educated coaches will both make it easier to recruit and retain players if the infrastructure is in place.

The 42 BEC Members interested in implementing the new coach education system have in general a few educated and especially highly educated coaches. The number of highly educated coaches is naturally reflected on the number of educated coaches at the entry level. However, the low number of educated coaches at all 3 levels among a majority of the 42 BEC Members interested in implementing a new coach education system clearly indicates both a need but also potential for educating more coaches. A need and potential for the coach education programme developed through the ADVANCE project can be fulfilled.

Conclusion

Having a well-functioning coach education system educating highly qualified coaches is an important part of growing the sport of badminton. It can be concluded that there is a real need for a more an advanced coaching education system among most of the BEC Members. The potential and interest for implementing a new coach education system are clear. A potential which the coach education system develops through the ADVANCE project could be fulfilled.

Analysis 2: Comparison of Badminton Coaching Education Systems in Denmark, France, England and Germany

Introduction

The top European nations in badminton have been developing their own badminton coaching education systems for years. These systems have educated many excellent coaches who have contributed to the development of badminton in their countries. Unfortunately, these educations are not accessible to all coaches across Europe. Even if they were, many coaches would face challenges in following the program due to language barriers.

However, the more information we can gather from the coaching education systems of these top nations and integrate it into the Advanced Badminton Coaching Education, the more coaches across Europe will benefit.

By conducting a quantitative analysis of the coaching education systems in these top nations, it will be possible to gain a clear direction of the priorities and the time that needs to be allocated to the Advanced Badminton Coaching Education's educational topics.

Method

Selection of countries

In order to gain insight into the badminton coaching education systems, it was important to include badminton associations with a long tradition in badminton. These associations should have their own badminton coaching education system, a significant number of registered players and having performed at the highest level within recent years.

The criteria on which the badminton associations for this analysis were selected are as follows:

1. The association must have existed for more than 50 years.
2. Winning medals at World Championship since 2009.
3. Having their own badminton coaching education system.
4. Having more than 30.000 registered players.

The identified European national associations were (highlighted in different colors) the following ones:

- German Badminton Association
- French Badminton Federation
- Badminton England
- Badminton Denmark

Data collection and analysis

The data collection presented in this analysis is based on the education manuals and education schedules for each course. For the purpose of comparison, each lesson has been categorized into one of the following topics:

- Technical
- Tactical

- Physical training
- Sports psychology
- Children and juniors physical, mental and social development
- Anatomy and Biomechanics
- Training planning
- Nutrition
- Pedagogy and didactics
- Personal coaching philosophy
- Entrepreneurships
- Assessment

Since certain lessons gathered a combination of some of the topics mentioned above, the most dominant topic for each lesson was selected.

The number of minutes allocated to each topic has been registered and presented under the results section. Each topic includes both theoretical and practical lessons.

The courses in the badminton coaching education systems have also been divided into the following three levels:

- Entry level
- Intermediate level
- High level

This division is determined based on the target group for the specific courses.

Results

The results for each of the selected Badminton Associations are presented first followed by a comparison of the different education levels across the four countries. The results part will conclude with a comparison of all levels combined for each badminton coaching education system.

German Badminton Association

The coach education system in Germany comprises three levels of education, starting with the entry level (Named C-level in Germany), which contains of usually 7 courses with a total time of 5625 minutes, followed by the education for obtaining the intermediate level (named B-level in Germany), which consist of usually 5 course modules with a total time of 4950 minutes, and finally, the highest level of education (named A-level in Germany), which contains usually 6 training modules with a sum up of 7200 minutes.

Figure 1 displays the time allocation under each topic in the different levels of coaching badminton education.

GERMAN BADMINTON ASSOCIATION Topics	ENTRY LEVEL		INTERMEDIATE LEVEL		HIGH LEVEL	
	Minutes	%	Minutes	%	Minutes	%
Technical	2340	41.60	630	12.72	900	12.50
Tactical	630	11.20	900	18.18	1260	17.50
Physical training	945	16.80	585	11.81	1215	16.88
Sports psychology	0	0.00	495	10.00	810	11.25
Children and juniors physical, mental and social development	135	2.40	495	10.00	585	8.12
Anatomy and Biomechanics	135	2.40	270	5.45	135	1.88
Training planning	180	3.20	315	6.36	450	6.25
Nutrition	45	0.80	0	0.00	0	0.00
Pedagogy and didactics	450	8.00	540	10.90	495	6.88
Personal coaching philosophy	405	7.20	405	8.18	585	8.12
Entrepreneurships	180	3.20	90	1.81	540	7.50
Assessment	180	3.20	225	4.54	225	3.12
TOTAL	5625	100.00	4950	100.00	7200	100.00

Figure 1. The German coaching education system, time allocation and areas covered.

The total sum of educational minutes is 17.775 minutes with 7.200 minutes (40.50%) being allocated to the highest level of the education.

The Technical topic has the highest priority of all topics on the entry level with 41.60% of the total education time. It reflects how the German Badminton Association emphasizes the importance of having coaches on an entry level who can teach players the strokes and footwork of the game. The technical topic is still a priority on both the Intermediate (12.72% of total education time, second highest prioritized topic) and High Level (12.50% of total education time, third highest prioritized topic) but the time allocated is significantly lower.

The emphasis on tactical aspects of the game within the coaching education system increases from the entry level (630 minutes) to the intermediate level (900 minutes) and finishes as the highest-prioritized topic in the highest education level (1250 minutes).

The topic "physical training" has also a high focus being the second highest-prioritized topic on the entry level (16.80% of the total education time), the third highest-prioritized topic on the intermediate level (11,81% of the total education time) and the second highest-prioritized topic on the highest level (16.88 % of the total education time).

Sport psychology becomes a priority on the intermediate level (10.00% of total education time) and the highest level (11.25% of the total education time) of the education. At the entry level the focus is more on other topics, since no time is allocated under this one.

Badminton Denmark

The Danish badminton coaching education system has a total of 16950 minutes education time allocated for all three education levels. Approximately the same amount of education time is allocated for the Entry Level (2520 minutes) and the Intermediate Level (2430 Minutes). However, a significantly larger amount of education time (12000 minutes) is allocated for the High Level.

Figure 2 displays the time allocation under each topic at the various levels of badminton coaching education.

BADMINTON DENMARK Topics	ENTRY LEVEL		INTERMEDIATE LEVEL		HIGH LEVEL	
	Minutes	%	Minutes	%	Minutes	%
Technical	1035	41.07	720	29.63	0	0.00
Tactical	180	7.14	675	27.77	1620	13.50
Physical training	90	3.57	180	7.41	360	3.00
Sports psychology	135	5.35	225	9.26	120	1.00
Children and juniors physical, mental and social development	450	17.85	135	5.56	0	0.00
Anatomy and Biomechanics	0	0.00	0	0.00	0	0.00
Training planning	360	14.28	90	3.70	960	8.00
Nutrition	0	0.00	0	0.00	180	1.50
Pedagogy and didactics	0	0.00	180	7.41	1920	16.00
Personal coaching philosophy	45	1.78	45	1.85	6060	50.50
Entrepreneurships	0	0.00	0	0.00	0	0.00
Assessment	225	8.92	180	7.41	780	6.50
TOTAL	2520	100%	2430	100.00	12000	100.00

Figure 2. Danish coaching education system, time allocation and areas covered.

The topic “technical” holds the highest priority on the first two education levels with 41.07% and 29.63% of the total education time allocated, respectively, dedicated to learning strokes and footwork. No education time is allocated to the “technical” topic at the highest education level. The “tactical” topic receives limited focus (7.14% of total education time) at the Entry level but gains more attention at the Intermediate level (27.77% of the total education time) and the Highest education level (13.30% of the total education time). It seems that the Danish badminton coaching education system believes it is important to prioritize learning the strokes and footwork because once you master court movements and strokes, you can better understand where to optimally place the shuttle.

“Children and juniors physical, mental and social development” holds the second highest priority at the Entry Level with 17.85% of the total education time. It could indicate that the education at the entry level is centered around kids and junior training. At the later education levels, this topic only receives 5.56% of total education time at the Intermediate Level and 0.00% at the High Level.

Organising the training seems important for the coaches to learn early on in the Danish badminton coaching education system with 14.28% of the total education time allocated to “Training planning” at the Entry Level. At the later education levels, the topic still has priority, although not to the same degree as at the Entry Level. “Personal Coaching Philosophy” is of significant importance at the highest education level comprising 50.50% of the total education time. At lower education levels, this topic is briefly addressed, with less than 2.00% of the total education time allocated. Having coaches who understand their strengths and weaknesses and know how to lead and coach top talent and the best players in Denmark seems to be crucial when considering the time allocated for this topic at the highest education level.

“Physical training” and “Sport Psychology” are priority at all levels of the Danish badminton coaching education system. At the intermediate education level 7.41% and 9.26% of the total education is allocated under these two topics, respectively. However, topics such as “Anatomy and biomechanics”, “Entrepreneurship” and “Nutrition” receive very limited or no focus.

Badminton England

The Badminton coach education system in England has a total of 5360 minutes split into 3 educational levels. Figure 3 shows the distribution of the areas and time allocation.

BADMINTON ENGLAND Topics	ENTRY LEVEL		INTERMEDIATE LEVEL		HIGH LEVEL	
	Minutes	%	Minutes	%	Minutes	%
Technical	270	29.83	395	17.28	0	0.00
Tactical	105	11.60	165	7.22	255	11.75
Physical training	90	9.94	0	0.00	0	0.00
Sports psychology	0	0.00	0	0.00	0	0.00
Children and juniors physical, mental and social development	0	0.00	0	0.00	0	0.00
Anatomy and Biomechanics	0	0.00	115	5.03	0	0.00
Training planning	0	0.00	210	9.19	800	36.87
Nutrition	0	0.00	0	0.00	0	0.00
Pedagogy and didactics	120	13.20	180	7.87	340	15.67
Personal coaching philosophy	200	22.09	415	18.16	670	30.88
Entrepreneurships	60	6.62	0	0.00	0	0.00
Assessment	60	6.62	805	35.22	105	4.83
TOTAL	905	100.00	2285	100.00	2170	100.00

Figure 3. The English coaching education system, time allocation and areas covered.

The topic “Technical” holds the highest priority at the Entry level, with 29.83% of the total education time dedicated to learning strokes and footwork training. At the Intermediate level, more time is allocated to the “Technical” topic compared to the Entry level, but the percentage allocated to this topic is lower. On the highest education level, the “Technical” topic is not given priority. It is evident that the English badminton coaching education system emphasizes the importance of focusing on strokes and footwork when players start playing badminton. As players gain more experience, the technical aspects of the game should be in place.

The Tactical part of the game has become sort of focus on all educational levels (11.60% on Entry level, 7.22% on Intermediate level and 11.75% at the highest level of the total education time). “Training planning” is the highest prioritized topic on the highest education level (36.87% of the total education time). The topic has no priority on the Entry level and with only small focus on the Intermediate Level (9.19% of the total education time).

“Personal coaching philosophy” is highly prioritized throughout the three educational levels (22.09% on the Entry level, 18.16% on the Intermediate level and 30.88% on the highest level of the total education time). Understanding who you are as a coach and how you want to coach and develop players receives significant emphasis in the English badminton coaching education.

It seems like the English badminton coaching education has some clear priorities regarding the topics they focus on. Topics such as “Nutrition”, “Children and juniors physical, mental and social development” and “Sport psychology” are not part of any of the educational levels.

Assessment of the coaches plays a significant role in the Intermediate education level with 35.22% of the total education time being used on assessing the coaches skills.

French Badminton Federation

The training system for coaches in France comprises two levels of education for volunteer coaches, “Ruban Peda EB1” and “Ruban Peda EB2”, converted into an Entry level with a total allocated time of 4410 minutes (73 hours and 30 minutes) and a High-Level education with an allocated time of 53820 minutes (897 hours).

In figure 4, the respective distribution of time and topics is presented:

FRENCH BADMINTON FEDERATION	ENTRY LEVEL		HIGH LEVEL	
	Minutes	%	Minutes	%
Technical	360	8.16	4680	8.70
Tactical	0	0.00	2220	4.12
Physical training	90	2.04	3000	5.57
Sports psychology	60	1.36	4140	7.69
Children and juniors physical, mental and social development	0	0.00	4000	7.43
Anatomy and Biomechanics	0	0.00	2460	4.57

Training planning	810	18.36	13080	24.31
Nutrition	0	0.00	2460	4.57
Pedagogy and didactics	840	19.04	7680	14.28
Personal coaching philosophy	1560	35.37	9420	17.50
Entrepreneurships	0	0.00	0	0.00
Assessment	690	5.64	680	1.26
TOTAL	4410	100.00	53820	100.00

Figure 4. French coaching education system, time allocation and areas covered.

The three topics with the highest priority in the badminton coaching education at the Entry level in France are:

1. Personal coaching philosophy (35.37% of total education time)
2. Pedagogy and didactics (19.04% of total education time)
3. Training planning (18.36% of total education time)

All three topics relate to how to plan and deliver badminton training. Only 8.16% of the total education time is dedicated to the technical aspects of the game, such as learning strokes and footwork, with no time allocated for the tactical topic.

In the high-level part of the badminton coaching education system in France, it stands out that nearly 900 hours are allocated to the education. This implies that a substantial amount of time is dedicated to all education topics except for entrepreneurship, as it is not part of the badminton coaching education at the highest level.

The three topics with the highest priority in the highest education level in France are the same ones as for the entry level. However, the order of these topics is different:

1. Training planning (24.31% of total education time)
2. Personal coaching philosophy (17.50% of total education time)
3. Pedagogy and didactics (14.28% of total education time)

It can be highlighted that the three topics have a high priority on both education levels.

The technical and tactical topics of the game have in total 12.82% (8.70% technical + 4.12% tactical) of the total education time allocated. Still a total of 6.900 minutes (115 hours) combined for both topics, but compared to other topics is still less.

Comparison of badminton coaching education based on the education level

Figure 5 shows a comparison of the German, Danish, English and French badminton coaching education systems for the Entry education level.

The German badminton coaching education has the most minutes allocated (5625 minutes) on the entry level and the English badminton coaching education has the least (905 Minutes).

The topic “Technical” has the highest priority in three out of the four education systems on the Entry Level (German, Danish and English). The French badminton coaching education system stands out with prioritizing other topics on the entry level such as “Personal Coaching Philosophy.”

In the four badminton coaching education systems, the topic “Technical” has significantly higher priority than the topic “Tactical.” Notably, the French Badminton Coaching Education has no focus at all on tactical aspect of the game. Learning the strokes and footwork (Technical aspect) is being prioritized before learning where to place the shots and where to be positioned on court (Tactical aspect).

Topics such as “Nutrition”, “Sports psychology”, “Entrepreneurship” and “Anatomy and Biomechanics” have none or very limited priority on the Entry Level within all the four educations. The Danish Badminton Coaching education prioritizes 5.35% of the education time on Sport Psychology as the topic across all education getting the highest priority.

ENTRY LEVEL	GERMANY		DENMARK		ENGLAND		FRANCE	
	Minutes	%	Minutes	%	Minutes	%	Minutes	%
Technical	2340	41.60	1035	41.07	270	29.83	360	8.16
Tactical	630	11.20	180	7.14	105	11.60	0	0.00
Physical training	945	16.80	90	3.57	90	9.94	90	2.04
Sports psychology	0	0.00	135	5.35	0	0.00	60	1.36
Children and juniors physical, mental and social development	135	2.40	450	17.85	0	0.00	0	0.00
Anatomy and Biomechanics	135	2.40	0	0.00	0	0.00	0	0.00
Training planning	180	3.20	360	14.28	0	0.00	810	18.36
Nutrition	45	0.80	0	0.00	0	0.00	0	0.00
Pedagogy and didactics	450	8.00	0	0.00	120	13.20	840	19.04
Personal coaching philosophy	405	7.20	45	1.78	200	22.09	1560	35.37
Entrepreneurships	180	3.20	0	0.00	60	6.62	0	0.00
Assessment	180	3.20	225	8.92	60	6.62	690	5.64
TOTAL	5625	100.00	2520	100.00	905	100.00	4410	100.00

Figure 5. Comparison of the German, Danish, English and French badminton coaching education system on the Entry Level.

These four topics might be better suited for the Intermediate and/or Higher educational level.

The Danish badminton coaching education system is the only one of the four educations, where the topic: “Children and juniors physical, mental and social development” has a high priority. In total, 17.85% of the time is allocated to this topic followed by the German badminton coaching education system with only a 2.40% of their time. The English and French systems are not prioritizing this topic on the entry level.

“Personal Coaching Philosophy” has a very high priority in the English and French badminton coaching education system with 22.09% and 35.37% respectively of the total education time being spent on this topic.

Figure 6 shows a comparison of the German, Danish, English and French badminton coaching education systems of the Intermediate education level.

Due to the French badminton coaching education system having a different structure compared to the other three countries, they are not featuring on the intermediate level.

INTERMEDIATE LEVEL	GERMANY		DENMARK		ENGLAND		FRENCH	
	Minutes	%	Minutes	%	Minutes	%	Minutes	%
Technical	630	12.72	720	29.63	395	17.28	0	0.00
Tactical	900	18.18	675	27.77	165	7.22	0	0.00
Physical training	585	11.81	180	7.41	0	0.00	0	0.00
Sports psychology	495	10.00	225	9.26	0	0.00	0	0.00
Children and juniors physical, mental and social development	495	10.00	135	5.56	0	0.00	0	0.00
Anatomy and Biomechanics	270	5.45	0	0.00	115	5.03	0	0.00
Training planning	315	6.36	90	3.70	210	9.19	0	0.00
Nutrition	0	0.00	0	0.00	0	0.00	0	0.00
Pedagogy and didactics	540	10.90	180	7.41	180	7.87	0	0.00
Personal coaching philosophy	405	8.18	45	1.85	415	18.16	0	0.00
Entrepreneurships	90	1.81	0	0.00	0	0.00	0	0.00
Assessment	225	4.54	180	7.41	805	35.22	0	0.00
TOTAL	4950	100.00	2430	100.00	2285	100.00	0	100.00

Figure 6. Comparison of the German, Danish, English and French badminton coaching Education system on Intermediate Level.

The German badminton coaching education (4950 minutes) has double the amount of education time at the intermediate level compared to both the Danish (2430 minutes) and the English (2285 minutes) badminton coaching education programs.

“Technical” and “Tactical” topics are the two highest prioritized topics for both the German and Danish badminton coaching educations. Denmark prioritizes nearly to 30.00% of their total education to each of these topics which shows a strong focus on the badminton specific details of the game. The English badminton coaching education has a high priority on the “Technical” topic (17.28% of the total education time) on this education level where the “Tactical” topic only gets 7.22% allocation of the total education time. In summary, it's unsurprising that the badminton-specific aspects of the game continue to hold a significant emphasis in badminton coaching education systems.

“Nutrition” and “Entrepreneurship” have neither or very limited focus in all of the three education systems at the intermediate level. “Nutrition” is getting no attention at all, and “Entrepreneurship” is the only topic that garners some focus in the German badminton coaching education with 1.81% of the total education time allocated to this topic.

All the three badminton coaching education systems are focusing on “Assessment” at this level. However, the English badminton coaching education allocates more than 1/3 of the total education time (35.22%) to assessment, whereas the two other systems allocate between 4-8% of the total education time.

“Personal Coaching Philosophy” still has a high priority in the English badminton coaching education (18.16% of the total education time) and much higher priority compared to the two other education systems (between 1.00-9.00% of total education time). It seems to be generally crucial to the English badminton coaching education, since there is a considerably amount of time allocated to this topic at both the Entry and Intermediate levels.

The German and Danish Badminton Education systems are quite similar at the intermediate education level in terms of topics’ prioritization. “Physical Training”, “Sport Psychology” and “Children and juniors physical, mental and social development” have between 5-12% priority in those system. In the English badminton coaching education system these topics are not getting any attention at the intermediate education level.

Figure 7 displays a comparison of the German, Danish, English, and French badminton coaching education systems at the Highest education level.

HIGH LEVEL	GERMANY		DENMARK		ENGLAND		FRANCE	
Topics	Minutes	%	Minutes	%	Minutes	%	Minutes	%
Technical	900	12.50	0	0.00	0	0.00	4680	8.69
Tactical	1260	17.50	1620	13.50	255	11.75	2220	4.12
Physical training	1215	16.87	360	3.00	0	0.00	3000	5.57
Sports psychology	810	11.25	120	1.00	0	0.00	4140	7.69
Children and juniors physical, mental and social development	585	8.12	0	0.00	0	0.00	4000	7.43
Anatomy and Biomechanics	135	1.87	0	0.00	0	0.00	2460	4.57
Training planning	450	6.25	960	8.00	800	36.86	13080	24.30
Nutrition	0	0.00	180	1.50	0	0.00	2460	4.57
Pedagogy and didactics	495	6.87	1920	16.00	340	15.66	7680	14.26
Personal coaching philosophy	585	8.12	6060	50.50	670	30.87	9420	17.50
Entrepreneurships	540	7.50	0	0.00	0	0.00	0	0.00
Assessment	225	3.12	780	6.50	105	4.83	680	1.26
TOTAL	7200	100.00	12000	100.00	2170	100.00	53820	100.00

Figure 7. Comparison of the German, Danish, English and French badminton coaching Education systems at the Highest Education Level.

The French Badminton Coaching education allocates significantly more education time, with a total of 53,820 minutes at the highest education level, in contrast to the Danish (12,000 minutes), German (7,200 minutes), and English (2,170 minutes) badminton coaching education programs. It is important to highlight that some of the additional minutes can be explained by the French Badminton Coaching education system not providing education at the Intermediate Education level. This implies that more education may have been allocated to both the Entry Level and the highest education level.

The following three topics have equally the highest priority for the French and English education systems at the highest education level:

- Personal Coaching Philosophy
- Training planning
- Pedagogy and didactics

The Danish badminton coaching education at the highest level considers “Personal Coaching Philosophy”, “Pedagogy and didactics” and “Tactical” as the three highest prioritized topics.

For the German badminton coaching education is still the technical and tactical aspects of the game the ones that have the highest priority along with the physical training. It is interesting to note the difference of priorities of education time allocated to specific topics at the highest education level among these educations. These differences may be attributed to varying interpretations of the coaches' requirements at the highest level. However, it is important to highlight that the French badminton coaching education still allocates more time (combined 6900 Minutes of total education time) to the technical and tactical parts of the game than any of the badminton coaching educations. This suggests that the technical and tactical aspects of the game remain a priority within the French badminton coaching education system.

“Nutrition” still gets no attention (German and English badminton coaching educations) or limited attention (4.57% of the total education time) in the French and Danish (1.50% of the total education time) badminton coaching education system.

Only the German badminton coaching education focuses on “Entrepreneurship” with 7.50% of the total education time allocated to this topic. The three other badminton coaching educations do not have this topic as part of their curriculum at this level.

Figure 8 shows a comparison of the German, Danish, English and French badminton coaching education systems of all the education levels combined.

When comparing the total amount of education time for the four different badminton coaching education systems, the French Badminton coaching education system stands out by having 3 times as much education time compared to the next education system.

Interesting to highlight that the German and Danish badminton coaching education systems tend to focus more on technical and tactical parts of the game throughout their education, whereas the English and French systems have a high focus on “Personal coaching Philosophy” and “Training planning.”

Generally, topics such as “Nutrition”, “Anatomy and Biomechanics” and “Entrepreneurship” have less than 5.00% of total education time allocated in all of the badminton coaching education systems. The reason for these priorities needs to be further investigated.

It is interesting to point out that the English badminton coaching education system allocates the highest percentage of its total education time to assessment (18.02% of total education time). In terms of the actual number of minutes dedicated to assessment, the English system (970 minutes) is second only to the French system (1370 minutes). However, it's important to recognize that the French system has ten times the total education time as the English system but less than twice the time allocated for assessment.

ALL LEVELS COMBINED Topics	GERMANY		DENMAK		ENGLAND		FRANCE	
	Minutes	%	Minutes	%	Minutes	%	Minutes	%
Technical	3870	21.77	1755	10.21	685	12.73	5040	8.65
Tactical	2790	15.69	2475	14.40	525	9.75	2220	3.81
Physical training	2745	15.44	630	3.66	90	1.67	3090	5.30
Sports psychology	1305	7.34	720	4.19	0	0	4200	7.21
Children and juniors physical, mental and social development	1215	6.83	585	3.40	0	0	4000	6.86
Anatomy and Biomechanics	540	3.03	0	0.00	115	2.13	2460	4.22
Training planning	945	2.78	1410	8.20	1010	18.77	13890	23.83
Nutrition	45	0.25	180	1.05	0	0	2460	4.22
Pedagogy and didactics	1485	8.35	2100	12.22	640	11.89	8520	14.63
Personal coaching philosophy	1395	7.87	6150	35.78	1285	23.88	10980	18.85
Entrepreneurships	810	4.55	0	0.00	60	1.11	0	0.00
Assessment	630	3.54	1185	6.89	970	18.02	1370	2.35
TOTAL	17775	100.00	17190	100.00	5380	100.00	58230	100.00

Figure 8. Comparison of the German, Danish, English and French badminton coaching Education system with all levels combined.

Discussion

The discussion of the results will be done with the perspective of providing with clear directions and priorities of topics for the development and design of the ADVANCE Badminton Coaching Education.

When discussing the results of the analysis, it is necessary to address the data collection process. As the course schedules and lesson plans have been evaluated, it was clear that some lessons covered more topics. For instance, when the coaches attending the courses explain a technical concept, elements of pedagogy and didactics are also incorporated in that lesson. Instead of trying to precisely divide the time spent on different topics in each lesson, we opted for a simpler approach. This approach allocated the lesson's time based on its primary topic. The reason for this choice is: first, it would be very challenging to accurately divide the time between various topics, and second, it would require significant human resources. Considering these points, it was decided that the straightforward

approach being used, which focuses on the primary topic of each lesson, still provides a clear direction and sets priorities for the ADVANCE Badminton Coaching Education program.

Unsurprisingly, the technical and tactical aspects of the game are highly prioritized at the entry level. Therefore, it needs to be considered the total amount of education time allocated to these topics at the ADVANCE Badminton Coaching Education. Especially, if the candidates for the education will have some formal badminton educational background, then it could be assumed that the candidates would have a fundamental understanding of those two topics. If education time is allocated for technical and tactical aspects of the game at the ADVANCE badminton coaching education, then the two topics must be dealt with at the advanced level.

Topics such as “Entrepreneurship”, “Nutrition” and “Anatomy and biomechanics” are not highly prioritized in any of the badminton coaching education systems. “Anatomy and biomechanics” as a topic can be argued that is closely related to the “Technical” topic when getting and understanding of the strokes and footwork. In this learning process, it would be natural to include the movement of the joints and the dynamic muscle work. In the development of the ADVANCE Badminton Coaching Education “Nutrition” and “Entrepreneurship” can be argued to play an important and innovative role. Coaches need to find ways of making a living from coaching. Especially, at the beginning of the badminton coaching career, not many coaches can find a full-time job. Therefore, getting inspiration and insights from an entrepreneurship module could be useful in terms of getting the coaches closer connected to the sport. It might be a bit surprising that “Nutrition” does not play any significant role in any of the Badminton Coaching Education systems, particularly at the highest education level.

At the highest performance level in badminton, more and more off court topics are being optimized in order to get a competitive advantage.

At the moment, “Nutrition” is not one of them. It can be argued that “Nutrition” might be the next topic to get extra attention in the next version of badminton coaching educations and therefore a topic that should be considered for the ADVANCE Badminton Coaching Education.

"Personal Coaching Philosophy" is a topic that receives significant priority at the highest education level. Understanding your values and how they influence your coaching and training methods becomes even more important as you work with higher-level players. This topic appears relevant for allocating a substantial amount of education time, especially for badminton coaching programs that have a longer duration.

The topic “Children and juniors physical, mental and social development” has a different priority in the different badminton coaching education systems. Understanding the opportunities and challenges that juniors are facing due to natural maturation seems important if your badminton coaching education system is focused on educating coaches that are working with kids and juniors as a target group. However, it can also be an important topic for a coach who has a strategic position in a club, region or association, where the coach is responsible for the development of player pathways programmes and training environments. Having a deep understanding of the juniors’ natural maturation as persons could shape the structures and environments that support and strengthen the players’ development.

“Sport psychology”, “Physical training” and “Training planning” are topics that are prioritized in all the badminton coaching educations. The topics are athlete-focused and related to ensure a proper

development and performance of the player. It can be argued that the topics are a must for any badminton coaching education and should also have a priority in the ADVANCE Badminton Coaching Education.

“Assessment” has a different priority in the four badminton coaching education systems. This research does not dig into details about the reasons behind the priorities and philosophies set to their respective assessments’ approaches. National rules coming from the governing bodies might as well force specific assessment protocols. However, it is important to consider if the role of the assessment process is for the coaches attending the education to get a certificate which will allow them to coach certain players, or if the assessment is being used as a tool in the development of the coaches’ competencies. It means that the “Assessment” is not seen as a “checkpoint” for the coaches possessing certain competencies but instead, it is seen as a part of the continued players’ growth.

There are good reasons for both approaches, but it is important for the ADVANCE Badminton Coaching Education to consider the role of the “Assessment” for the education.

Conclusion

The coaches’ level which is the target group for the ADVANCE Badminton Coaching Education will define the education time allocated to each topic. The technical and tactical parts of the game will have a priority no matter the level of the coaches participating in the education. However, the less experienced the coaches are, the more focus should be on the technical and tactical aspects of the game. The more experienced the coaches are, the more emphasis and education time allocated to “Personal Coaching Philosophy”.

The target group of coaches for the ADVANCE Badminton Coaching Education and their intended positions later in the coaching careers also determines the priority of topic “Children and juniors physical, mental and social development.” If the ADVANCE Badminton Coaching Education aims at educating and develop coaches who will work with kids and juniors or are having a strategic role in the club, regional or association, then, this topic is a must.

Topics such as “Sport psychology”, “Physical training” and “Training planning” seem to be a must for all badminton coaching educations and should also be included within the ADVANCE Badminton Coaching Education. If the ADVANCE Badminton Coaching Education went beyond the traditional topics, then “Entrepreneurship” module would be an interesting topic to be included.

Finally, the role and approach of the “Assessment” process must carefully be considered in terms of being in line with the philosophy and purpose of the ADVANCE Badminton Coaching Education.

Analysis 3: Interview with Education Managers from three of the leading European badminton associations

Introduction

The leading European badminton associations all have their own badminton coach education programs, which have been developed and refined over many years. Each program is based on a long tradition of badminton in the specific country, accumulating many years of high-level badminton experience. This experience, in combination with generic and scientific sports knowledge, forms strong educational foundations that have proven to produce highly competent coaches capable of coaching at all levels, from grassroots to the international top level.

These educational programs are not accessible to all European coaches due to the programs being delivered in the native languages of the countries or the associations not allowing foreigners to participate in the education. The badminton coaching programs are seen as providing the associations with a competitive edge in the increasingly intense competition for success on the international stage.

In developing the ADVANCE Badminton Coaching Education, it will be very useful to understand the fundamental approaches and key elements of these successful programs. Being able to learn from these programs and incorporating their approaches and key elements into the ADVANCE Badminton Coaching Education seems highly meaningful. This will also allow more European coaches to benefit from the knowledge and experience gained from these badminton education programs.

Method

Interviews were conducted with the Education Managers of Badminton Denmark, Badminton England and the German Badminton Association. The three badminton associations were chosen due to having a long track record of being able to develop young beginners into international top players winning medals at European championships, World Championships and Olympic games. All three associations have also their own badminton coaching education systems installed and have many years of experience in educating and developing high performance coaches. These coaches have played a vital role in training, coaching and developing the players who brought success to their association.

All interviews were conducted online by the same experienced interviewer using Microsoft TEAMS. Semi-structured interviews were conducted using open questions, which were followed up by additional questions when needed. The interviews were structured around 5 main topics (examples of the questions are provided under each topic):

Structure and philosophy of the badminton coach education

- Describe the philosophy of your coaching education system.
- Please explain the structure of your coach education system.
 - What is the reasoning/thoughts behind the structure?
- In your opinion, which part of your badminton coaching education system seems especially good?
 - Please explain by examples and in details, how you work with this/these parts

- Which improvements would you like to make in your current education system?
 - Please explain by examples and in details
- When and how are the coaches being evaluated and assessed during your badminton coaching education system?
 - What is the reasoning and thoughts behind using this kind of assessment process?
- How is your coaching education system better compared to other Badminton Coaching Education systems in Europe?

Resources invested into badminton coach education

- If you had twice the funding available for educating coaches, what would be your priorities?
- How many full-time employed staff do you have involved in your coach education system?

Virtual learning

- Do you include virtual learning in your coach education system?
 - If so, please explain by examples and in details.
 - Which topics of badminton coaching education do you think works well as virtual learning?
 - Which topics are not suited for virtual learning?
- Which perspectives do you see in virtual learning in the future in relation to badminton coaching education?

Mentoring programme (Definition of mentor: An experienced badminton coach with whom you can discuss badminton related issues related to training, matches or your own development as a badminton coach).

- Do you use a mentoring programme in your badminton coaching education system?
 - If yes – please explain how the setup is.
- If you should set up a new mentoring programme or improve the current mentoring programme, how would you set it up?
 - Please explain the reasoning behind it.
 - How many people should optimally be connected to a mentor?
 - Which “no go’s” would there be when setting up a mentoring programme?
- Which topics do you find especially important that the Mentor focus on in the development of the coaches’ development?

Former top players - Dual career

- Do you have a special educational setup for former top players, who want to perceive a career as a badminton coach?
 - If yes, please explain/describe the educational setup.
 - If no, please explain why you don’t find this necessary.

- What are the main challenges for former top players in the transition from being a player to become a coach?
 - In which coaching areas does former top players normally have their strengths?
 - In which coaching areas are former top players normally having their weaknesses?
 - How do you handle these challenges in your badminton education system?

Results

The answers from the three Badminton Education Managers (German Badminton Association, Badminton Denmark and Badminton England) have been analysed for trends and similarities.

Data will be presented for each case study individually and afterwards, the data will be combined, and discussed.

The three case studies will be presented as follow:

- German Badminton Association (Case study A)
- Badminton Denmark (Case study B)
- Badminton England (Case study C)

Case study A – German Badminton Association

Structure and philosophy of the badminton coaching education.

In Germany, all sports educations (included badminton) are structured and designed by the National Olympic Committee.

Within the German badminton coaching education pathway, there are three different education levels: A, B & C (Level A being the highest level and Level C the starting level). The C-level courses is organised by the 16 regions during usually 2-6 months period with a total of 100 hours. It means more C-level course can be held at the same time. The B-level encompasses less than 100 hours and the A level more 100 hours of total education time.

The coaching education assessment tools are crucial when evaluating objectively the candidates taking part in the courses. The assessment process is based on the National Olympic Committee's formalities, there is a competences-oriented assessment with a 2-hour assessment session where a theoretical written exam is conducted together with a practical session assessment composed by a live video/match analysis where some questions are asked.

The badminton coaching education system is particularly strong as the lowest education level (C), the volume of hours delivered is significantly high compared to other European countries.

Resources invested into badminton coach education.

Human resources investment is also one of the most fundamental pillars to deliver coaching education successfully.

The German badminton association and their regional member associations has in total currently 5-full time employees to deliver the education in Germany and 3-full time employees to deliver it in English. Coaches that take part in the education have to pay a participation fee.

The priorities would be oriented towards tutors' education (educating people to deliver coaching education courses) if they had the double of the amount, they invest annually badminton coaching education.

Virtual learning

The German Badminton Association has developed its own online platform where diverse content such as webinars or videos area shared.

During Covid-19, the Level C course delivered within 5 weekends, implemented one of the weekends completely virtual.

According to their experience within blended education, the most suitable subjects to be delivered via online are those related to movements and theoretical topics. On the contrary, personal skills development would not be a good match for this system.

Mentoring programme

Mentoring is not part of the coaching education programme in Germany. However, if they had the financial resources to implement such a programme, facilitating meetings with the best coaches would be one of the first steps:

“If possible, everybody should meet the best coaches. Network with the best coaches and to discuss training. To make some groups and to meet the best coaches. 3 – 4 coaches as a group and meet each other 3 – 4 times/year. To discuss about planning, and how to apply new learning.”

Former top players: Dual Careers

The German Badminton Association does not have a strong dual career programme for professional athletes. However, former world class players can start directly with the A level education.

The strength of a former top players is the advantage of playing badminton. They have a deep insight of the game from a playing perspective.

The Educational Manager shares his opinion about the main challenges faced by former badminton players:

“The former players should have a perspective. The transition is a big challenge. How fast the transition should be. The fastest is not the best. They should have also unsuccessful experience to become a successful coach.”

Case study B – Badminton Denmark

Structure and philosophy of the badminton coaching education

In Denmark, the sport education falls under the umbrella of the national federations.

Badminton Denmark has designed a five-level coaching education system: 0,1,2,3,4 (being Level-0 the starting level and Level-4 the highest level). The lowest levels (0&1) encompass a total of 52 hours; the level 2 encompasses a total of 100 hours; level 3 360 hours & level 4 encompasses between 320-380 hours.

Regarding the assessment, Badminton Denmark does not have any exams nor assessments in the lowest levels but only in the most advanced ones.

The basic coaching education (Levels 0,1&2), coaches learn how to train children. Technical training is the basis, but they learn skills, court movement. The focus is not on the tactical aspects of the game.

According to the Badminton Education Manager's perspective, the coaching education system established in Denmark is highly practical as the coaches are constantly on court observing other coaches' demonstrations and sharing their different styles.

Resources invested into badminton coach education

In Badminton Denmark, there are currently around 3 – 5 full time employees in the Danish coaching education system.

In the regional structures there are around 40 part-time employees involved in the delivery of coaching education.

Coaches that take part in these courses must pay a participation fee as well.

Virtual learning

The Danish badminton association has developed an online platform where content related to tactical training (among others) is being incorporated. It is believed that going through this online content as a preliminary step before stepping into court can be highly beneficial.

According to Badminton Denmark's educational manager, everything can be taught via online, however, when it requires a deeper level for analysis and synthesis it's always better to do it face-to-face, especially when it comes to the pedagogical and teaching skills.

Mentoring programme

Mentoring is not part of the coaching education programme in Denmark either. However, it is believed it would be useful depending on the level of the education. The higher-performance oriented, the more individualized it should be:

“Three to four meetings to discuss about the training. The coaches are used as mentors, to watch the training and to discuss about the lessons. 1 to 1 mentoring education, at high level.”

Badminton Denmark supports face-to-face gatherings to conduct mentoring programme rather than online tools.

Former top players: Dual Careers

Badminton Denmark is currently not implementing any dual careers program. Former athletes take part in the coaching education courses as a regular participant. The Badminton Education Manager

the following regarding the challenges of the former top players, when they want to make the transfer to coaching:

“One of the main challenges faced is that they need to know more about teaching. They are very good at high performance, but the level they start working is at basic level. They must know and learn the methods on how to work with young people at basic level.”

Case study C – Badminton England

Structure and philosophy of the badminton coaching education

Badminton England’s coaching education is composed of 3 levels: 1,2&3, (Level-1 being the starting level and Level-3 being the highest level).

The Level-1 is delivered within a 2-day course (30 hours) and brings the basic aspects to the coaches. It develops the coaching skills through demonstrations, communications, technical and tactical aspects and hitting actions (instead of isolated hits). The Level-2 is delivered in a 5-day course (50 hours) and it is composed by 2 modules: the first 2 days are dedicated to technical and tactical aspects and the second modules is focused on 3 levels: coach to play, coach to compete and coaching in schools. Finally, the level 3 encompasses a 9-day course (100 hours) and it is designed to educate head coaches during 4 weekends.

Assessing the coaches in the English badminton coaching education system is being done online through a 30-question test. The Level 2 is arranged face to face, and the Level 3 is based on an assignment on annual planning in badminton.

Resources invested into badminton coach education

Part of the Federation’s income is allocated under coaching education. Hence, a participation fee is required for coaches that decide to take part in coach education courses in England.

If the available income coaching education at Badminton England was higher, then investment would be on creating more online resources and getting access to international experts.

Virtual learning

The badminton education in England has incorporated a blended system since 2020. For the Level 1 course, the assessment is conducted completely online. In the Level 2, part of the content has been virtually added (the equivalent of 2-3 hours) and the Level 3 a total of 10 hours of e-learning.

According to the Badminton Educational Manager, the most suitable content to be delivered online is the one related to planning, communication and sport science. In contrast, technical and tactical aspects are better conveyed face-to-face.

Mentoring programme

At the moment, Badminton England has no mentoring programme incorporated within their coaching education. However, they would like to include an online programme where mentors can cover the 8 areas of the country.

The best topics that could be addressed during the mentoring, based on the opinion of the Badminton Education Manager are technical and tactical aspects of the game.

Former top players: Dual Careers

Badminton England is currently not implementing any dual career programme but there is a good lobby discussion with top players to guide them into being club or national coaches.

One of the main challenges for the former professional athletes is the mindset change, how to teach them to acquire the ability of coaching. Putting the player in the right context and observe what goes wrong in order to help them to understand how he/she should act.

Discussion

In this analysis some insights were gathered through online interviews conducted with three European Badminton associations to gain a profound understanding of their coaching education systems.

All three associations operate with badminton education systems that covers the full spectre of educating coaches from entry level to the level of high performance. The systems are based on more levels of education ranging from 3 to 5 levels. On each level a significant number of hours of badminton education is provided. Despite having more levels and many hours of education, each of the three education differs a lot with the total number of hours. The German Badminton Association offers the most extensive program, while Badminton England provides the least hours of instruction. Nevertheless, when examining the coaching education systems of these three badminton associations, it becomes evident that a considerable number of hours are essential to train and develop a coach from an entry-level to the point where they are capable of coaching at the highest level.

The three associations invest significantly in their education programmes through having more people full time employed. In all cases, candidates interested in enrolling in these courses are required to pay a participation fee. This financial investment can be understood as these associations emphasize the value of quality education which requires high level personal with dedication, engagement and commitment.

Turning to the topic of mentoring programs, according to the educational managers' answers, such initiatives have not yet been integrated into the coaching education systems of these associations. However, there is a consensus on the potential of mentoring in strengthening the coaches' competencies as coaches. The financial implications of implementing a mentoring programme seems to be one of the main challenges according to the associations. There is no common agreement on which topics to be best suitable to be addressed in a mentoring programme. The suggested areas vary from tactical aspects of the game to annual planning and retrospective analysis of training sessions.

Furthermore, an interesting aspect emerges from the integration of virtual learning within the three coaching education frameworks. The virtual approach is used either as part of their assessments or simply as a hub to share all the learning materials and participants' information. There is also a consensus of that not all topics are suitable for virtual learning. Technical and tactical aspects of the games seem to more suitable for face-to-face interaction.

This blended and face-to-face education showcases the adaptability of modern learning approaches that lead us to conclude the importance of developing this approach within education. An approach where three of the leading European badminton associations just have started to explore the potential of it. Furthermore, it emerged that none of the interviewed national federations have presently established dedicated dual career initiatives within their programs, designed to facilitate athletes' transition into coaching roles. Notably, Badminton Germany stands out for its approach of allowing direct entry into the highest coaching levels to former professional athletes. While this approach has certain merits, it might raise questions about the potential oversight of fundamental coaching foundations and essential communication skills, among others.

Conclusion

Educating competent and highly skillful coaches requires a significant number of hours of formal badminton education. It was confirmed by the Badminton Education Managers of the three leading European badminton associations that was also shown in their respective badminton coaching education systems.

Virtual learning possibilities and implementation of mentoring programmes in badminton coaching education system seem to be positively embraced and considered with great potential for the development of the coaches' competencies. This despite that three of the leading European Badminton associations still haven't implemented it yet or are in the beginning of their journeys within these areas.

Furthermore, there is a need to emphasize the creation of dual career opportunities for former top players within the badminton coaching education systems, ensuring that it becomes an integrated part of the overall badminton coaching education framework.

Analysis 4: Badminton coaching education – view from European badminton coaches

Introduction

The process of educating badminton coaches in Europe is not uniform; it varies significantly due to a range of factors. These factors shape the structure of badminton education frameworks in terms of both the skills taught and the content covered, leading to diverse implementations across different countries. In some nations, these educational frameworks fall under the umbrella of the Ministry of Education, while in others, the responsibility lies with the National Federations.

The objective of the analysis was to delve into the first-hand experiences of coaches, taking into account their professional and educational backgrounds based on the country they come from. This analysis aimed to gain insight into their perspectives regarding the prioritization of content within coaching education, as well as their views on the integration of a blended educational approach and a mentoring program within the educational framework. By analyzing these aspects, the intention was to understand how coaches' backgrounds, priorities, and preferences influence the way coaching education is structured and delivered and therefore, guiding the ADVANCE European Badminton

Coaching Framework towards a common path and support the development the ADVANCE Badminton Coaching Education.

Method

A Google Form-questionnaire composed by 5 questions was filled out by 63 badminton coaches from 23 different European countries.

The questionnaire consisted of basic questions to get a better understanding of the coaches' origin (country, gender, and age) together with their educational and professional background (experience as a badminton player, badminton coaches' certifications, sport sciences education, among others), and additional questions to get to know their positions regarding blended education system, mentoring programme and content prioritization. The questions asked are provided below under the different areas that composed the questionnaire:

Education

- What's your badminton coaching education?

Coaching education content priorities

- Which learning areas in your opinion should have the highest priority in a badminton coaching education program? (Please select maximum 5.)

Virtual learning

- In your opinion, which learning areas are best suited for a virtual learning approach?

Mentoring programme

- Would you be interested in a virtual mentoring program focusing on your development as a badminton coach as part of a badminton coaching education program?
- How often would you like to have sessions with your mentor?

Results

The answers provided by the 63 badminton coaches have been analysed for trends and similarities. These answers will offer an overview of how coaching education frameworks are perceived across 23 different European countries, as well as how their educational background may be inclined towards a certain path or another. Additionally, how a potential blended education framework could be distributed. Data will be presented for each question.

Coaches' origin: country, gender and age.

- The coaches' sample represents 21 European countries: Albania, Austria, Armenia, Bahamas, Czech Republic, Hungary, Denmark, Finland, Germany, Greece, Holland, Italy, Ireland, Poland, Portugal, Romania, Singapore, Slovenia, Spain, Surinam, Sweden, United Kingdom. The 2 non-European coaches were also based in Europe.
- Out of the 63 coaches that partook in the process, the 19% of the sample (12) were female coaches and 81% (51) were male coaches.

- According to the age of the participating coaches, there were 17 coaches ranged between 41-50 years old; 16 coaches between 31-40 years old; 11 coaches between 21-30 years old; 9 coaches between 51-60 years old and 7 coaches over 60 years old.
- Their experience as badminton players, 46% have played on a National/Regional level; 27% BEC International Circuit and 27% BWF World Tour/Super series.

Education

To have a better understanding about the coaches' education background, the following answers were found:

- 39.7% were certified BWF Level 3 coaches or equivalent (L3)
- 31,7% were certified BWF Level 2 coaches or equivalent (L2)
- 7.9% were certified BWF Level 1 coaches or equivalent (L1)

Coaching education content priorities

Figure 9 presents the priority topics for a coaching education based on the coaches' level of badminton education. Each coach could pick up to 5 topics. No differences between the 3 education levels were seen for the different topics.

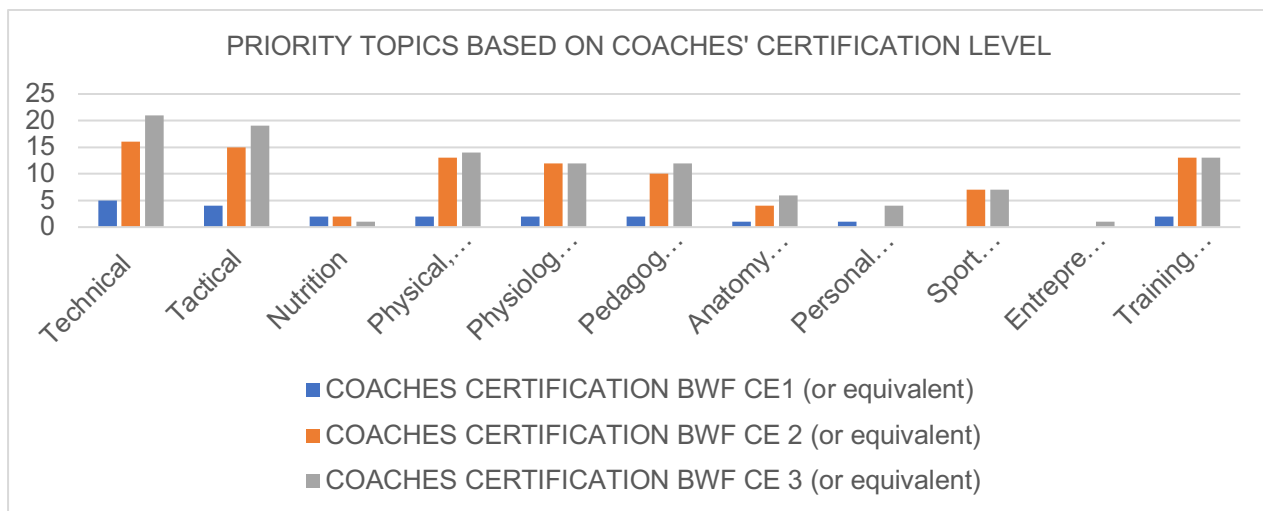


Figure 9. Prioritised topics for a coaching education framework voted by the coaches that participated in the questionnaire. 5 topics could be chosen by each coach.

It becomes evident that the tactical aspect of the game holds a considerable importance for the majority of coaches. Among Level 3 coaches, 21 respondents prioritized the tactical aspect, followed by 16 Level 2 coaches and 5 Level 1 coaches.

Shifting the focus to the technical field, we observe a similar trend, with Level 3 coaches placing the highest emphasis, as evidenced by 19 responses, followed by 15 Level 2 coaches and 4 Level 1 coaches.

The areas of physical, mental, and social development were also substantially interesting among Level 3 and Level 2 coaches, receiving 14 and 13 votes, respectively, while only 2 votes were cast by Level 1 coaches.

On the contrary, topics such as entrepreneurship, nutrition, and personal coaching philosophy were found to be the least prioritized by the surveyed coaches.

Virtual learning

The survey also delved into the virtual learning approach, encompassing an examination of coaches' interests in this educational modality and their preferences for suitable subjects for online delivery. As before, coaches could pick up to 5 topics.

Figure 10 illustrates the survey results related to virtual learning.

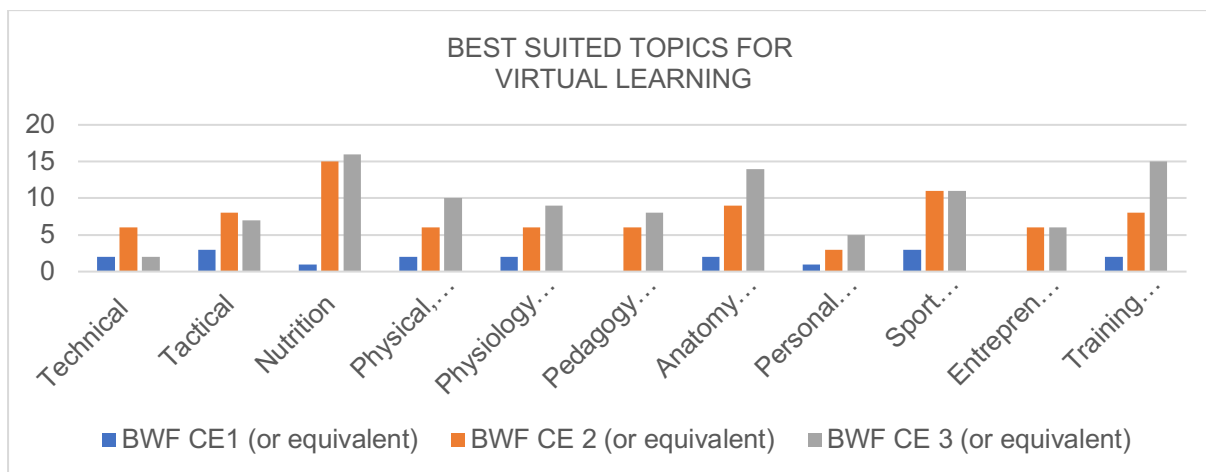


Figure 10. Best suited topics for a virtual learning approach voted by the coaches that participated in the questionnaire. 5 topics could be chosen by each coach.

Nutrition emerged as a predominant area of interest, compiling the highest number of votes from both Level 3 (L3) and Level 2 (L2) coaches, with 16 and 15 votes, respectively. On the contrary, Level 1 (L1) coaches placed a preference for sport psychology and the tactical aspect, with 3 out of 5 votes among these areas.

Moreover, certified coaches at Levels 3 and 2 expressed a keen inclination towards incorporating training planning, as well as anatomy and biomechanics, within the scope of potential topics conducive to a virtual learning approach.

The technical and tactical aspects of the game is being considered that suitable for virtual learning among the coaches.

Mentoring programme

The findings presented in Figure 11 shed light on the inclined position regarding the interest in a virtual mentoring programme. In general, the coaches find a virtual mentoring programme interesting. Remarkably, the entire Level 1 (L1) coaches sample expressed either an interest or a strong interest in such a programme, mirroring a similar position among Level 2 (L2) and Level 3 (L3) coaches.

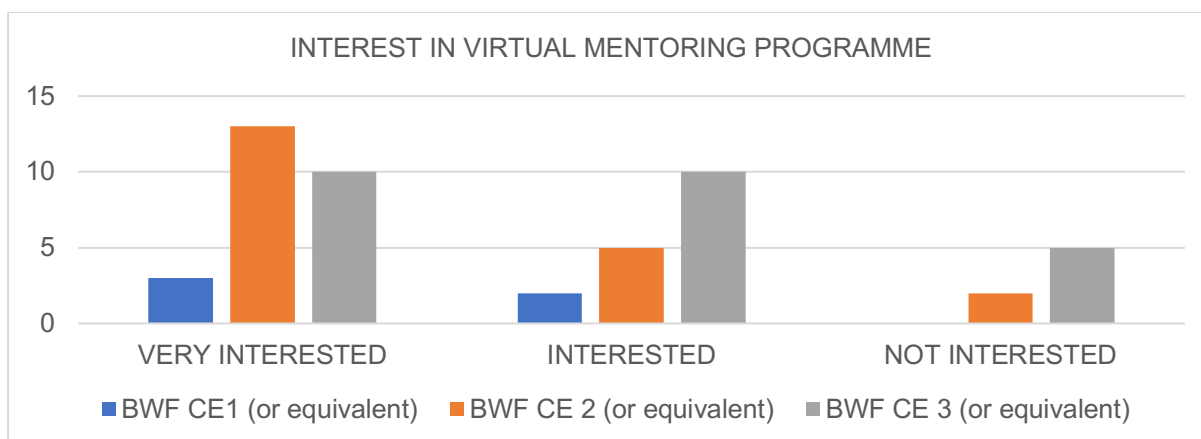


Figure 11. Interest in virtual mentoring programme showed by the coaches that participated in the questionnaire

Another aspect for consideration within the mentoring programme lies on the frequency of mentoring sessions desired by coaches with their respective mentors. Figure 12 presents an overview of the preferences expressed by coaches with different levels of expertise. Among Level 1 (L1) coaches, the most voted preference leans towards having mentoring sessions once a week. Level 2 (L2)

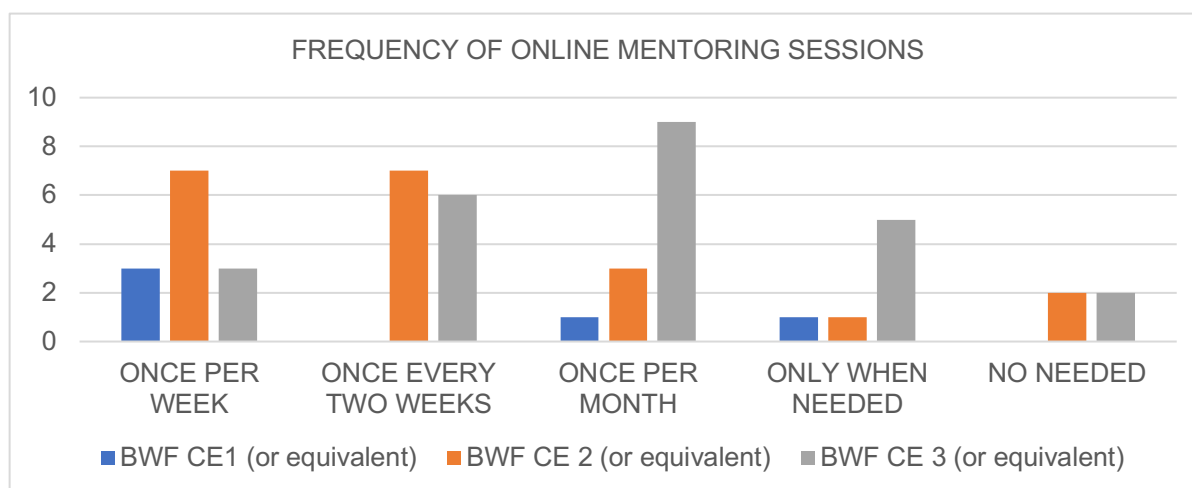


Figure 12. Most optimal frequency to have online mentoring sessions according to the coaches that participated in the questionnaire.

coaches, however, demonstrate a broader range of preferences, with "once a week" and "every second week" options receiving equal support. Conversely, options such as "once a month," "only when needed," or "not needed at all" gathered significantly fewer votes.

In the case of Level 3 (L3) coaches, the data suggests that the most favoured alternative is "once a month," followed closely by "once every two weeks," with 9 and 6 votes, respectively. Nevertheless,

a small group of coaches within this category also expressed interest in "only when needed" or indicated that mentoring was "not needed at all."

Discussion

In this questionnaire, some insights were gathered from the responses provided by the participating coaches, emphasizing various aspects of badminton coaching education.

One finding is the consistent prioritization of both technical and tactical aspects of the game across all levels of coaches, including L3, L2, and L1. This emphasis reinforces the critical role that these dimensions play in a badminton coaching framework. Moreover, it presents a shared recognition of the significance of training planning, particularly among L3 and L2 coaches, who seem to place particular importance on this area.

On the other hand, an interesting observation emerges when considering the coaches' perceptions of the sport psychology or mental aspect of the game. It becomes evident that coaches at lower education levels, such as L1, tend to assign less importance to this dimension in their coaching education. This pattern could be attributed to the level of the players which they typically coach.

Another relevant observation from the survey is the minimal regard coaches have for entrepreneurship as a topic. This finding suggests a potential gap in their understanding of the business aspects and potential of making badminton coaching a living. This lack of focus on entrepreneurship may pose challenges for coaches seeking to establish a sustainable coaching career, emphasizing the need for a more comprehensive view of the profession beyond the technical and tactical aspects.

Switching the focus onto the mentoring programme shows that the L3 coaches prefer more time between the mentoring sessions compared to the L2 and L1 coaches. This observation might have several potential explanations.

Firstly, it's plausible that the more time needed between mentoring sessions for L3 coaches may be attributed to their demanding schedules. These coaches, who likely have reached a higher level of coaching expertise, may find themselves occupied with extensive planning and coaching commitments, having limited time for mentoring sessions.

Secondly, it's possible that L3 coaches possess a higher level of self-confidence in their coaching abilities and may perceive themselves as less reliant on mentoring support. This self-assurance might lead them to allocate their time and resources differently, prioritizing other development activities over mentoring.

Thirdly, due to a higher education level for the L3 coaches, the topics being discussed might be more complex which requires more time for reflection afterwards.

Nevertheless, further research is needed to further understand the underlying reasons for the L3 coaches' priorities in relation to a mentoring programme.

Conclusion

In the construction of Badminton Coaching Education, which is based on blended learning, it is clear that some topics seem to be more suited for virtual learning and others for face-to-face learning. The badminton specific topics such as technical and tactical development seem to be best suited for face-to-face learning whereas topics that can be considered more theoretical such as nutrition, training planning and sport psychology would be well suited for virtual learning.

A mentoring programme is considered as an interesting aspect of Badminton Coaching Education and something that should be implemented. The higher badminton education level someone has, it seems that the more time (between 2 weeks and up to a month) between the mentoring sessions is preferred.

Analysis 5: Dual Career- Interviews with current and former European international players

Introduction

When international players end their careers after many years of training and competing, it has a great value to the badminton world to continue keeping them involved in the sport in some sort of capacity. One of those capacities can be as a badminton coach where they have the possibility of passing on their many years of experience to the next generation of players.

Getting a badminton coaching education can provide the current and former international players with the theoretical background needed to contextualize their experiences as players and use them efficiently and constructively in a badminton coaching context. It is a misconception that players will automatically also be good coaches. Teaching others to play badminton requires different competencies than learning to play the game yourself. But current and former international players have an advantage of having a deep understanding of the game.

The transition from player to coach can be challenging in many other ways. Transitioning to a coaching career after one's playing career requires the individual to undergo a formal badminton coaching education in order to effectively engage in badminton coaching. In some countries it is not allowed to do badminton coaching without a badminton education. The players who want to go into the transition as a badminton coach after their playing career face the challenge of finding time and being present during an education. The players have a fully packed calendar with trainings and competitions around the world, which complicates getting enrolled into an education while still playing.

The objective of conducting interviews with both current and former international players is to gain insights into how a badminton coaching education program can be designed and arranged in a way that makes it more attractive for them to participate in.

Method

The interviewed sample was represented by 8 former international players from Holland, Germany and Scotland. The respondents were chosen based on their experiences and results throughout their careers as performance athletes. All of the respondents have been full time professional badminton players for at least 5 years playing international tournaments.

All interviews were conducted online by the same experienced interviewer using Microsoft TEAMS. The interviews were based on open questions, which were followed up by additional questions when needed. The interviews were structured around three main topics (examples of some of the questions are provided under each topic):

Structure of the coaching education

- Which kind of flexibility will be required for you to take part in a coach education with educational activities spread over a 10-month period?
- Which periods of the year would be best suited for the face-to-face courses when considering the tournaments calendar?

- Which periods during an Olympic cycle will be best suited for the face-to-face course activities?
- Which setup of face-to-face courses during a 10-month period would you prefer while being an active player and why:
 - 2 face-to-face courses of a 10–12-day duration each
 - 4 face-to-face courses of a 5–6-day duration each
 - 6 face-to-face courses of a 3–4-day duration each
- If you had the opportunity to do the coach education over a 2 x 10-month period instead of the normal 10-month period. Would you find the coach education more interesting?
 - If yes – why?
 - If no – why not?
- Would virtual learning modules be interesting for you while being an active player (why/why not)?
- Which badminton coaching areas do you find unsuitable for virtual learning?

Transition from a player to coach

- Which areas within badminton coaching, do you believe you have an advantage, compared to others who have not been a top player?
- Which areas would be specifically important for you to have focus on in a badminton coaching education in order to make better use of your experience as a top player?
- If it was possible to “steal” 1 or 2 competencies/skills from your coach for you to use as a coach – what would these competencies/skills be?

Content of the coaching Education

- Please rate each of the following topics from 1-5 based on how much knowledge you have (1 = have no knowledge, 5 = have great knowledge). If you have already completed a badminton coaching education, then try to think back when you were still a player and had no coaching experience:
 - Technical (shots and footwork)
 - Tactical
 - Children’s and juniors’ physical, mental and social development
 - Anatomy and biomechanics
 - Physiology and physical training
 - Sport psychology
 - Training planning
 - Nutrition
 - Pedagogy and didactics
 - Personal coaching philosophy
 - Entrepreneurship

Results

The answers from the eight respondents have been analysed for trends and similarities. Below are the results presented under each of the three main topics:

Structure of the coaching education

Online training program for coaches

- All respondents argued for online training courses because they have a very busy and demanding schedule.
- All respondents in the interview had positive answers regarding the online learning applications, while focusing on information to improve their own play.
- The virtual/online learning tools are used to improve training skills mixed with field lessons and data analysis of played matches.
- In badminton training, the parts related to technical and tactical training cannot be properly assimilated. This is not possible online, since the tools used during training involve exemplification, correction, multiple repetitions, adverse conditions etc.

Face-to-face (offline) training program for coaches

- The former players claimed that it is very difficult to schedule face-to-face (offline) classes due to the competition calendar, the venues of the competitions they are going to participate in.
- It would be advisable to organize face-to-face classes during the competition breaks, taking into account the tournament calendar in which the international players participate.
- According to those interviewed, the coach training during the Olympic cycle would be advisable to be scheduled a year or two before the beginning of the qualifications for the Olympics, for better focus on the sports event.
- The opinions regarding the configuration of face-to-face classes in 10 month-time were divided as follows (ranked by preferred configuration, with 1 being the highest priority and 3 the lowest priority):
 1. 4 face-to-face classes within 5 to 6 days each
 2. 6 face-to-face classes within 3 to 4 days each
 3. 2 face-to-face classes within 10 to 12 days each
- 4. The players had different opinions depending on the established performance objectives, the competition calendar, the venue etc., all this were to be established by mutual agreement with the coach.

Training duration for coach

- Most of the respondents said that the coaching training of 2 x 10 months instead of 1 x 10 months program was too long, and that they preferred the shorter version.

Transition from player to coach

From player to coach

- According to the respondents, the transition from player to coach is facilitated by the advantage that international players have compared to other players, due to their experience, especially when it comes to mental and technical training.
- The most important challenge (during a training) when you made or still have to make the player-to-coach transition is giving advice. The answers of those players interviewed underlined that the challenge for the badminton player is not benefiting from the support and advice of the coach, while the challenge for a coach consists in lacking pedagogical skills. During training as a badminton coach, based on the experience as a player, the respondents considered that finding the most effective learning methods and good communication are of the utmost importance.

Qualities of the coach

- According to all the players participating in this interview, the most effective coaches consistently offer pertinent guidance by employing efficient techniques for teaching technical procedures, sharing tactical strategies for gameplay, and ensuring mental fortitude through psychological athlete preparation.
- The respondents worked with coaches having the following coaching skills, which they would be happy to use in their future career as coaches: creativity, calmness, passion and motivation.

Content of the coaching Education

The respondents rated their knowledge about specific topics that are traditionally a part of badminton coaching educations. The table 14 shows their ratings on each topic.

Topic	Respondent								Average
	1	2	3	4	5	6	7	8	
Tactics	5	3	3	4	4	3	5	4	3,9
Nutrition	3	4	4	4	5	3	4	4	3,9
Technique	2	4	3	4	4	3	2	4	3,3
Physiology and physical training	4	2	2	2	3	5	2	4	3,0
Personal coaching philosophy	3	4	1	4	3	2	4	3	3,0
Entrepreneurship	4	3	2	3	2	3	4	3	3,0
Sports psychology	3	3	2	3	2	4	3	3	2,9
Pedagogy and didactics	2	2	4	2	3	2	4	3	2,8
Physical, mental and social development of children and teenagers	3	2	2	2	3	2	4	2	2,5
Anatomy and biomechanics	2	3	3	1	3	4	1	3	2,5
Training planning	3	2	2	3	2	3	3	2	2,5

Table 14: Rating of the knowledge about specific topic that the respondent possess. (5 = have great knowledge, 1 = have no knowledge)

The respondents believe that they have the most knowledge about “Tactics” (3,9), “Nutrition” (3,9) and Technique (3,3). “Physical, mental and social development of children and teenagers” (2,5),

“Anatomy and Biomechanics” (2,5) and “Training planning” (2,5) are rated as the topics which the respondents feel they have the least knowledge.

Discussion

The importance of a flexible education structures has been outlined in the “EU Guidelines on Dual Careers for Athletes”¹ when designing educations who should cater dual career for athletes. The current research confirmed this approach as all current and former international players highlighted the importance of being able to combine the education with a packed training and tournament schedule. A flexible approach of including online education possibilities would be welcomed by the current and former international players. However, it was also noted by this sample, that not all topics were suitable for online learning. Especially topics addressing the understanding of technical development and training of strokes and footwork and tactical training would not be possible to do in an online format. There was a common understanding of the need of having face-to-face education in order to develop quality coaching skills in badminton.

The current and former international players preferred to have a structure of a coaching education with both online and face-to-face elements that was reduced to a 1x10 month period instead of 2x10 months. The face-to-face elements of the education were also preferred to be 4 x 5-6 days compared to 2 x 10-12 days or 6 x 2-3 days. The current and former international players highlighted the importance of making sure that the education could fit into the busy training and tournament schedule which could explain a structure with a duration of 10 months education period with 4 face-to-face courses of 5-6 days being a flexible structure that could suit their schedule. However, the timing of the education during the 4-year Olympic cycle was very important. The education should be placed in the first 2 years of the Olympic cycle due the current and former international players having no time and therefore their primary focus being on playing badminton during the Olympic qualification period.

The pedagogical competencies required by a coach in trainings or competitions’ situations are regarded as a big challenge by the respondents when making the transition from player to coach. It is also supported through that “Pedagogy and didactics” is the fourth lowest topic out of eleven, where the respondents feel they have great knowledge. Probably and not surprisingly, the respondents feel that they have the most knowledge in topics related to the game of badminton. Tactical knowledge scores the highest (Score: 3,9; see table 1) and knowledge regarding technique scores (Score: 3,3; see table 1) the third highest among the respondents. The primary emphasis should not be on acquiring specific game knowledge but rather on prioritizing the understanding of how to apply this badminton knowledge effectively in a coaching context. This focus on pedagogical insights should be when providing education to current and former international players.

¹ „EU Guidelines on Dual Careers for Athletes” by the European Union, 2013

Conclusion

When creating a Badminton Coaching Education that spans several months, it is crucial to ensure that it is both engaging and accommodating for current and former international players. This requires a flexible structure and organization that can be integrated with their demanding training and tournament schedules. Within a 4-year Olympic cycle, the initial 2 years appear to be the most suitable timeframe for those players.

Online education provides important flexibility for the players. Nevertheless, it is important to acknowledge that not all topics can be delivered online. Technical and tactical aspects of the game should be delivered in face-to-face courses.

Analysis 6: Dual career- Transition from a player to coach (Best practice in individual sports)

Introduction

The dual career focus for athletes is also a focus in other sports. Every sport has similarities and differences in the approach of getting top players involved in a coaching education. The goal is to include as many of the best practices from other sports in the construction of the ADVANCE Badminton Coaching Education as it will increase the possibility of even more international badminton players taking a badminton coaching education.

Interviews with education managers from three other sports will provide information on best practices for implementing dual career aspects for international players in the ADVANCE Badminton Coaching Education.

Method

Data collection

The aim of the project was to understand how National Governing Bodies deliver dual career to their athletes, with a focus on the transition from athlete to coach.

The research team contacted numerous National Governing Bodies to participate in this project, however many National Governing Bodies stated they did not have a structure or system to share.

Three organisations agreed to participate, and an online meeting was organised to conduct the interviews. All interviews were conducted over a one-hour period, were recorded, transcribed and analysed. Interviews were conducted with educational managers and/or representatives of the following organisations:

- Scottish Swimming
- International Tennis Federation; *Views were representative of Miguel Crespo, Head of Participation and Education, and not necessarily the ITF Organisation.*
- TASS- Talented Athlete Scholarship Scheme. Sport England funded partnership between talented athletes, education institutions and national governing bodies of sport.
 - TASS presented on behalf of numerous National Governing Bodies that they work with.

These organisations were chosen because they represented individual sports, had a structure or system to share and agreed to participate.

Here are some examples of the interview questions:

- *Can you describe your current general system of supporting dual career athletes?*
- *How do you deliver this type of support/education?*
- *What type of education/training is delivered- and how? Please be as specific as possible with examples (virtual learning, exemptions possibilities, rescheduling of dates for lessons and assessment)?*

- *Please describe the educational pathway from athlete into professional career? Is there a specific programme supporting the transition from elite athlete to coach? Please give specific examples*
- *How long have you supported/educated athletes on dual career?*
- *What are the key success factors for a dual career programme to succeed?*
- *How successful would you say the pathway is and why? Please provide examples of these successes.*
- *How many successfully transition from player to coach? or player to...?*
- *What are the main challenges when delivering this type of support? What are the key pitfalls of these programmes?*
- *How do you handle or mitigate these challenges within your system?*
- *How many dual career athletes do you support at one time?*
- *Please describe the financial situation of supporting dual careers?*
- *What specific qualities in your athletes mean they are successful at transitioning to becoming a coach?*
- *Which main challenges do you experience for an athlete in a dual career programme? (personal, the setup of the programme etc.)*

Data Analysis

Each interview was transcribed verbatim and later analysed to elicit key themes and features of these programmes.

The National Governing Bodies and Organisations provide a case study of the dual career pathway within their specific sport or partners. The data in this report will share ideas, and best practices from these Organisations.

Presentation of Data

Data will be presented for each Case Study individually. Direct quotes from the interviews will be included in coloured text boxes.

- **Blue** represents case study one and **Scottish Swimming**
- **Green** represents case study two and **International Tennis Federation (Miguel Crespo)**.
- **Yellow** represents case study three and **TASS**.

Subsequently, the data will be combined, and a discussion and conclusion will complete the report.

Results

Case Study One: Scottish Swimming

General Dual Career System

The representative of Scottish Swimming perceived their dual career pathway to be a successful yet developing pathway. Their dual career pathway supports junior athletes through to senior athletes, offering a range of support and services, including an education curriculum, and support from the performance lifestyle team.

Education Curriculum

Athletes were offered a curriculum of education by the National Governing Body, which was age and stage specific. Athletes are selected on to this education programme based upon age and performance level. Previously, the education was delivered in-person, however after the COVID pandemic, the education will be delivered using a hybrid method.

*“We’re just about to offer a **hybrid version** of that because of all the things we’ve **learned during COVID**, so our Academy program online takes place on a Sunday night. And everyone who is on the Academy program and the national senior junior team is able to sign up for those. So, they are things like **sports psychology workshops, nutrition, performance lifestyle to help them balance their studies and the sport, transition from school to university, a little bit of education around land training and priming for land warmups before racing**, and so on, and so our program, that runs through the autumn if you like just now, but for the first time ever, that will continue beyond”*

In addition to the support and education mentioned above, compulsory modules such as anti-doping are also delivered to the athletes, their parents and the coaches as part of this education curriculum.

These courses were described as courses to improve their athletic career, rather than academic or ‘dual career’ courses.

Performance Lifestyle Team

The representative of Scottish Swimming explained they work with the Performance Lifestyle Team who are employed by the Scottish Institute of Sport for further support. The Performance Lifestyle Team were described to assist with ‘transitioning phases’, liaising with academic institutions to solve timetable conflicts (between sport and academic commitments) and offering support at the end of an athletes’ career.

*“The **performance lifestyle team** who work at the Institute and we’ve been really fortunate that a couple of them have been former swimmers, which helps just a little bit of credibility within the sport. But also, they have **been very good at that transitioning phase**, if you’re like. They have **solved everything from curricular issue, changing exams**. I have invigilated exams in Australia and America and all over the world, and whenever we’ve been away on camps and competitions, they’ve all been facilitated by those performance lifestyle advisors and they have been excellent at those transition points through an athlete’s journey. Importantly, even the ones who are leaving the sport altogether and helping them find whatever it is just for their career or their destinations post swimming, that if someone leaves the sport, they have a sort of three month, a formal three month period of time at the end of their career, where that’s supposed to give them, I feel like a softer landing. A bit of a safety net beyond the point where they say right I’ve been to the Olympics, I’m quitting now. What do I do? Well very few of them do that because they’ve all had the support to be able to see them through to the next phase, even if that changes, or if they don’t 100% know what they’re doing. **At least the landings are bit softer with the help of the institute and lifestyle advisors**.”*

Seven lifestyle advisors across the country, provide a range of bespoke support both online and in-person. Topics include the transition to university (help organise accommodation, timetabling issues, where to access support) to general advice and support on the life of an athlete. It was especially a strength if these lifestyle advisors were former swimmers and could use their experience to help the next generation.

*“It does help if you could **talk the language but also speaks to their credibility. They’ve been there. They talk about showing us your scars show me your medals and those lifestyle advisors are able to demonstrate both of those**, if necessary, to say that I’ve been there, I’ve been in your shoes. I understand that the stresses that you have...I can’t speak highly enough of what it is that they’ve done to support...As I say to cut those corners and make sure that the things that can get on top of young athletes don’t, because **somebody who’s been there before knows how to help you solve that problem**”.*

Success of General Pathway

The pathway is seen as successful as shown by the below quote:

*“Our most successful athlete ever who’s just obviously being at the Olympics, he **learned to swim in Scotland, joined the Scottish club, has just graduated from a Scottish university**, so we’re very proud of the fact that **we can cater for everything from an introduction to the sport, right through to the top of the Olympic podium**”*

Transition from Athlete to Coach

Scottish Swimming employ a programme ran by Sport Scotland called Coaching Futures, to support the transition from athlete to coach.

The Coaching Futures programme facilitates a group of coaching apprentices, from a number of different sporting National Governing Bodies. The National Governing Bodies then place the apprentice in a suitable learning environment to learn and experience coaching, with a line manager within the same sport, and a mentor outside of their own sport to learn from other organisations and sports.

*“Sport Scotland have a program. It’s called **coaching futures** and we were the pilot governing body for that with a young man, he came from Bath University actually, he was a student and Olympic athlete. But he came back up and so **he transitioned**. He coached swimming...Well he coached in Edinburgh with the swim team, there he **coached a Para-swimmer and was instrumental in getting this young man to the point where he won a Paralympic medal in Rio and he was on the coaching futures program**, which **effectively meant that we employed him, we placed him in a suitable learning environment**, i.e. The club there and he was able to access additional support, from outside of swimming to help his development”*

The success of this annual programme has led to the programme growing and expanding in size. Scottish Swimming however explained, the limiting factor in having more coaching apprenticeships is money and resources.

*“The new guys, so it's going to be **three of them**. Aberdeen based, Edinburgh based, and Glasgow based again and so we are running them as a little pod within swimming, so we will have them as **a learning group within swimming and but they're also, I think now extended that to 10 and 11 sports at Sport Scotland**, so there's that external group...So we've got 3. So, we put money in. The host agency are putting money in, small amounts, and then the sports Scotland got their money, so it is being split three ways by us so we've created if you like a richer environment for our athletes to transition”*

The representative of Scottish Swimming described the set-up for this year's intake:

*“The three guys are markedly different and in their sort of background and their personality, but **they're being placed in situations where we are confident, they will get a good two-year apprenticeship**. They'll get paid for the privilege and at the end of that, although the host agency doesn't have to employ them and they may not all stay, they might all move around to the place from which they came, but I think they'll be employed because they're all really high-quality guys”.*

The programme is for retiring athletes, who want to become coaches; the athletes apply to be on the programme and are selected. The athletes then begin the apprenticeship when they have retired from competitive swimming. Although many swimmers gain coaching qualifications while still swimming, because of the nature of the sport (lots of opportunity to earn money while swimming), the apprenticeship is for retired athletes only.

What makes a successful athlete to coach transition? Swimmer Personal Qualities

The Scottish swimming representative described a number of personal characteristics or qualities which they deemed to be important for a successful transition from athlete to coach:

*“Some core principles. Scottish people tend to be quite **humble** and quiet introspective and some ways, and quite **caring** and I think as coaches that's a pretty good starting place to be honest, you don't have to have all the technical knowledge in the world if you don't have a way of communicating that with young people and inspiring them to love the sport and get better. So uhm. We've been fortunate in that all of them have been intelligent and they have been human, humble, and **obviously love the sport enough to want to make a career in it and continue to put something back and similar to I guess what they've taken out**. So, it's not that people think, I'll do that because there's a lot of money in it like other maybe professional sports would offer. I think people see the opportunities to be themselves, but to put something back into the sport so the characteristic I've seen a lot of them is it's probably a bit more humility, a bit more **respect for what they don't know as much as what they do**, but also wanting to do something special in the sport, and I wouldn't say that any of them, despite the fact that some of them offer good performance results, any of them were doing it because they wanted to coach Olympic gold medallists, quite the opposite. And I'm really pleased that they see themselves as finding a slot in the sport that will be probably at the lower end of the performance development pathway. They may become performance coaches, but uhm that's not what's driving them at the moment”.*

Challenges to the Athlete to Coach transition

One of the main challenges of an athlete to coach transition programme was described as an athlete's uncertainty about their future. Coaching was often seen as a safety net that athletes could fall into after their competitive career ended. However, many athletes do not understand or experience coaching until they have already retired and began the role.

*“Not everybody I think, knows exactly what they want to do. I think some people might. Not that I have many examples of this, but I've had conversations with people who say I don't really know what I want to do, I might just coach almost as a sort of that's OK, because I'll be familiar with that, it usually doesn't last for too long, but you know, I think that the challenge comes probably in them learning the skills, of what we would call **the skills of coaching, the craft skills, they have plenty of technical knowledge, but they maybe don't know how to impart it.** It's like you don't become a teacher in your first year out of university, when you qualify, you might think you are, but it takes a wee while to recognize that you don't know all the things you thought you did then and that's very similar to what happens with athletes who transition out to become coaches, they very quickly realized they don't know as much as they thought they did. I love this story. I can't remember the guy's name he did a PhD in Physiology and he got a job with British Cycling at Manchester. And I remember him talking at conference and he said he'd all this knowledge of Physiology and training and know and he said he thought that was all he needed to know to be an effective coach and he suddenly realized after like half a session that this logical knowledge was not what he needed. He needed to actually understand how to be a coach, not understand the science in the training theory. So, it was a lovely example of if you know, **being an expert in something, be it a discipline or an activity or something and then being thrust onto the poolside with us, with a stop watch and a pen to write on a on a whiteboard, he's gonna have to learn pretty quickly that all that stuff you thought you knew isn't going to cut it.** Whenever you're communicating with people who either don't understand you or don't like you, or don't want to do this stuff that you're asking them to do, so that's true of lots of things, but I think it's even sharper focus in athletes who very quickly become coaches”*

Case Study Two: International Tennis Federation

The International Tennis Federation is the Governing Body of world tennis, with over 200 National Tennis Associations affiliations.

General Dual Career System Education Curriculum

The representative of the International Tennis Federation explained their e-learning platform supports a range of athletes and coaches, offering a range of support and services for free. Their platform has more than 160 short courses for both coaches and players, some of which are mandatory such as ethics, anti-doping and integrity. Other courses offered include courses such as match preparation, how to address the media, nutrition, and preparation of equipment.

These courses were described as courses to improve them as players and coaches, rather than academic 'dual career' courses.

Challenges to a Dual Career System

Numerous hurdles and challenges were described in creating a successful dual career pathway in Tennis. The nature of tennis, means athletes are traveling and competing year-round, meaning it is difficult to provide formal dual career education/support. Since the COVID-19 Pandemic, online education provision has improved, however.

*“Tennis also is a little bit different to many other sports because we have a **full year-round season**. That means that there's not like in football or basketball, or maybe track and field or other sports that the players or the athletes they train during some periods and they compete in summer, **in tennis the calendar is all year round**, it is 52 weeks a year, so that means that some players in fact, even some junior players, they travel. **You know they travel all year round**. So, in the past it was **very complicated to you know to follow some sort of program**. Yeah, but now uh, now it's much **easier because of the online, the online services**”*

Even with better online education provision, difficulties remain because of the structure of the sport. Tennis players travel internationally all year round, to different countries and venues to compete, and often they are unaware of their schedule in advance. An athlete's schedule is out of their control dependent upon the timings of previous matches in competitions and their own success in the competition. This makes scheduling any dual-career education or training very difficult.

Another challenge identified with dual career education systems, was the accreditation and language in which education was offered. International Federations must provide education and support for athletes from various countries, who speak different languages. The education provided must also be accredited in many different countries for the athletes to be able to travel and utilise their qualifications once they retire.

*“You need to think more for the future, so how? **Whatever these players do will need to be eventually later recognized somewhere else**, you know, because their systems sometimes are different”.*

Further, it was perceived that another challenge for athletes taking part in qualifications was their current academic level. Athletes, especially in tennis, had spent a number of years away from academia and learning, and therefore often struggled with the complexity of the education programmes.

*“There are very few sports that are very similar in structure, in the structure of the calendar, you know there is almost no other sport that **they play 52 weeks a year number one**. Second, I don't know if you know **how the tennis competition works but you have a single elimination**. Let's say Wimbledon, you know you have a single elimination draw which had 128 players and 128 players start playing on Monday. So on that Monday 64 players are out. So if you have any plans or bookings or you know plane bookings or hotel bookings or you say look you know I invited my parents over to go for dinner on Tuesday or Wednesday. Maybe you are not anymore in the tournament because you lost the first day. So it's not like a football player that says look, I play in a play in London on this 17th of Sunday, then following the airplane and following weekend in Liverpool the following weekend in Manchester, no no no, in tennis you don't know. You don't know that's the first thing. But then during the day, the schedule of matches, but let's say that you are playing Wimbledon and play starts at 12. And you play the fourth match on court #2 starting at 12. So what time is that? You don't know because you are the 4th, so your match is the 4th one. So what do you do because if the match starts at 12 and there are three matches before you, the matches can be one hour, two hours, three hours you don't know, so you might not even play that day because it's very very.... So what are you doing? The guys they are at the venue, they go there, they warm up in the morning a little bit you know. And then what are they doing? They're there just waiting, waiting. Waiting for it to be called... **so there is a lot of dead time in in the life of a tennis player** and you have to be very you know you have to be I guess pretty tough and pretty focused to say, well, everyone here is doing nothing there on the sofas chatting and having a coffee or whatever before going to the match and I want to, I want to study. Or I'm gonna go to the hotel, but you cannot go to the hotel because they might call your match”.*

A final challenge in providing dual career opportunities to athletes, was the priority of the athlete. It was perceived to often be difficult to convince elite athletes to take time to focus on something else, such as other qualifications, when their focus and priority is being an elite level athlete:

Transition from Athlete to Coach

It was described that many athletes fall into coaching after finishing their athletic career, and often without any experience or qualifications.

*“We know that **many of them eventually they're gonna end up being tennis coaches.** And what happens in Tennis is that especially at the top level, these guys, **one day they are players and on the following day are coaching.** So these guys, they **don't even have a coaching certification or qualification, nothing.** They just you know, why, because they are there in tennis. And unfortunately for us and this is something that we are trying to address, there's not this mentality of look I am a player and if I want to be a coach I need to go through a coaching course”.*

Offering improved coach education to these elite athletes is a priority for the International Tennis Federation, to add to their knowledge base, however there are challenges in providing this education:

*“Can we offer coach education in a blended learning format so these guys are experts! These guys, they play very well. They know how the training is done because they received training. So they are experts in that, **the only thing they don't have is maybe the theoretical framework on background and the theoretical knowledge that underpins the practical knowledge...** You know they play very well. They demonstrate whatever and they do it much better than anyone else but if you would provide them with these theoretical, base knowledge, they would be even better coaches, and that's what we are trying. But how do we do that? Or what do we offer if one guy is here in one week in this country and the following week is somewhere else, so how do we? How do we arrange that? So then we are thinking of a credit system?”*

The representative of the International Tennis Federation explained their current athlete to coach education programme. Athletes must apply to their National Federation and be accepted on to this coaching education programme. Elite athletes who accepted, take part in these programmes; however, their experience as an athlete is taken into account and their coach education is adjusted in acknowledgment of their experiences.

*“We have a system by which we feed in to the higher levels some of the guys who have been, you know, professional players or whatever. So, what we do is what is called **the recognition of prior learning, because you've played a different level we recognize your previous experience.** We recognize what you've done and then you are allowed to take part in this higher level course, and the same happens with many federations. For instance, the French Federation has the same for there for the top players, male and female players, they go directly to the highest level course so. They do kind of a sped up, feeding process so these guys, they don't go through the normal route and this is a way of helping them in dual career and in your careers is that you don't go through the process that the rest of the people go, because you are different, because you have already shown and you have demonstrated and you have provided a valid demonstration of your ability as a player. So then you, yeah, you know it's like, for instance, if somebody is a medical doctor, the subjects related to Physiology, whatever this person, they don't need to take them. Or if they if someone is a psychologist, well we have a psychology test but this person doesn't take the test, you know why? Because they already done their degrees so it would be silly. So the same happens. Well, if you have been a professional tennis player, if we have a playing test, a demonstration test, you don't need to take it, why? **Because you were already a professional tennis player, so you've shown that... we give them access to higher level courses, which is more suited to their interests because these guys they will never coach beginner players.**”*

Challenges to the Athlete to Coach transition

Even the most experienced elite athletes, can still improve their knowledge and coaching by undertaking qualifications. The coaching courses, however, have to provide a balance between the topics offered without offending the athlete's ego:

*“Sometimes what happens with these very good athletes in all the sports is that they say, when you explain them something, they say well, look, I've done this all my life and I never knew that that was the reason or I still remember one guy when he went to a course and we were talking to him about Periodisation and the guy said oh I can't believe it is this periodisation. Never had, I mean I, you know, I always heard about that but never knew so OK, Very good...But also with these guys **you have to be careful because they have their ego. You know they have their ego and you have to be careful because if you haven't been a good player in many cases they might tell you who are you. Who are you to tell me? Who did you? Who did you beat? Who did you beat to tell me or to show me that I have to do things like this?**”*

A further challenge identified was the level in which elite athletes are expected to coach. It was perceived that elite level athletes only want to transition into coaching other elite level athletes:

*“It is like if you take a Nobel Prize and you put him in a kindergarten, so the guy is going to kill the kids and later he will shock himself, you know so. It is better for the future of humanity? That who are you? You are Roger Federer. OK, you go and you don't start teaching kids, because and they say that, I mean, I've been talking to many of these guys, **they say if you put me with more than two people in a court, I don't want to do it, why because they are used to working at that level, so that's how it works**”*

Personal Qualities: what makes a successful athlete to coach transition?

The International Tennis Federation representative described the main quality which they deemed to be important for a successful transition from athlete to coach: passion to teach.

*“I think there's only one. I think it's their **passion to teach**. If they have the passion to share their knowledge and expertise. That is then, the rest are details. You know, the rest is how do you communicate, how good you are in terms of I don't know, this guy is very good at motivating the team or this guy is very good at correcting whatever movements or this guy is very good at I don't know at dealing with the group or you are very good in short distances, or no this guy is a very good leader but I think at the end of the day it is are you passionate to teach, to show others to, or to help others? You know to teach is are you passionate to help others to learn your sport? Yes or no, because maybe after your playing career you say look, I'm fed up or you don't like the sport or you don't like travelling in case of tennis, many of the guys they stopped because they are fed up of traveling or whatever or look I really don't like to deal with people. I don't like to share or help people to learn. It's not, it's nothing bad”.*

What makes a successful dual career pathway?

The International Tennis Federation representative also described the success factors of ensuring the dual career programme succeeds:

*“The first one is **flexibility**. It is the **program that has to be adapted to the athletes**, not the athletes to the programme. You know, because the most important actors there are, is the people.... Also, **individualization**, so it has to be **tailor made as much as possible**”.*

Case Study Three: TASS

The TASS programme helps athletes over the age of 16, to balance sport within the rest of their lives, whether they are in education, training, or another form of personal development. TASS supports over 600 nominated athletes in 34 Sport England sports, who are eligible to represent England.

What is Dual Career?

TASS athletes must be pursuing a recognised programme of learning. This could be academic (e.g., A levels, Degrees), vocational (coaching), or it could be a placement programme, a professional pathway course, or an apprenticeship.

*“When we look at just what dual career is generally, I think **it needs to be a pathway where sport is valued but also the other aspect is quite highly valued as well**, not just something that the athlete is doing because they feel they have to do it and it's really an opportunity for that person to not only reach their potential as an athlete, but **also reach their potential in other areas of life as well** so that academic or their sort of vocational development, but also them as a person as well.”*

By this definition, neither of the athlete to coach training programmes discussed previously (in case study one or two) would be classified as dual career, as the athletes have to be retired in order to begin.

*“So, I think for **most programs that do have athlete to coach transition programs they tend to come at the end of the athletes career**. So, if we look at ones that the EIS or UK sport do or the FA do it tends to be either just when the athletes about to retire they start to sort of pick up these areas and pick up different coaching qualifications etc or it happens when the athlete is completely retired and then they move into the next step. **So, if that's the case, then for us it's not true dual career and you know for it to be true dual career it would have to happen simultaneously alongside one another during the athlete's career so they can get all those benefits around what dual career actually brings** for that person. And so, for us it doesn't really sit as dual career unless it's done within the career”.*

Transition from Athlete to Coach

Representatives of TASS described a typical pathway to making a career in coaching, where individuals enrol in a sports coaching course at a university; they qualify with a degree, and numerous accredited coaching qualifications from a range of Sporting National Governing Bodies.

For elite athletes, the typical pathway was described as an ‘emergency transition’:

*“It's a knee jerk reaction, so **I need to do something now because I'm retiring**. Yeah, it's not necessarily a planned transition. It's aahhhh what am I doing?”*

This was particularly the case for athletes who did not have a dual career, and solely focused upon being an athlete.

*“Well for athletes that maybe don't have a dual career. So, athletes that have gone through the system. They've just been **near enough 100% an athlete and then get to the end of their career. And it's like what now?** Maybe I'll do some coaching and then either through some volunteer experience or maybe potentially paid experience do their level one level two, Level 3 and fall into coaching that way. **But that wouldn't necessarily be a dual career. That's an almost an emergency transition”***

Challenges to the Athlete to Coach transition

Conflicts arise when National Governing Bodies are selecting the most successful or qualified coach, between those elite athletes who have been fast tracked to becoming coaches, and highly qualified coaches with vast experience and knowledge but who have not been an elite athlete themselves.

*“Gets down into the argument of **who's the better coach?** You've got a level 5 that's come through a university system, and therefore who's got a degree in coaching as well. Or you've got a Level 5 who's been an elite athlete, got the coaching, got the sport specific coaching in, but not necessarily the broader experience of a coaching degree”.*

*“They [elite athletes] won't do level one, two or three. **They'll get fast tracked to four and again they then lost what, 2-3 years of coach development because they don't need to do the beginners.** They've lost, you know they've lost the development so you could end up with somebody that's done our system get to level 5 and have 2 to 3 years of experience and a degree in sport. They can have that or an elite athlete that's done nothing and got level 5 within a year, but they have nothing that goes round it at all.*

*“**When a player does ‘I have to go into coaching because I don't know what else to do’** and I think they can be you know fast tracked into that environment and like we were saying before **they haven't built up or that experience they haven't got that portfolio of coaching, they haven't got the networks established and so yeah, even though they might have good contacts in the organization, it doesn't mean they're actually a good coach”***

Dual Career Athlete to Coaching Programmes

The Lawn Tennis Association is one National Governing Body who does provide 'true' dual career athlete to coach training programme, where the athlete is still competing while learning the coaching trade over a two-year period. This training programme was delivered both in-person and online; the LTA would coordinate the programme around the competition schedule.

*“**The model that we've got with the LTA is as a player coach model, so identified athletes who are still competing at a good level on the tour circuit and still training and performing at that level who have been identified as wanting to go into coaching.** We have **one of our delivery sites that you can get some work experience, mentor experience with one of the head coaches at that site as well as court time for their own training purposes.** And the LTA make sure that they put them through their **coaching qualifications, and they get additional support** there as well, so that's a model that does exist within tennis in this country, a three way partnership between sort of TASS, we put in a bit of investment, our delivery sites, who provide a little bit of investment but also court time and additional support services including strength and conditioning and the likes to continue as the athlete and then the LTA make sure they have the coaching qualifications and mentoring elements as well. So, we typically have **five athletes across the country on that program each year...** they would try and plan that program around their competition schedules and do it blocks when they were back for a period of time and it's part of the arrangement that when they are in the UK, they're based at the delivery site and they'll be providing coaching to the BUCS teams and the other club athletes around there... Obviously some of that may be done remotely if it is during really heavy competition period, but they tried as much as possible for it to be in person if possible and the LTA would do put on camps periodically so they bring their cohort together and maybe at Loughborough somewhere and do some group stuff as well”.*

The athletes must apply to the programme and be selected on to the programme. The benefit of this type of model, is that players who identify as wanting to be coaches, apply to the programme, gain the benefits of a dual career, and become qualified experienced coaches while still competing.

*“We identified the issue of there are elite, not many, that do want to be coaches, and it's very difficult to transition at the end. Because we know that, so why not do it gradually? Give them experience, because the elites go from level one, level two Level 3 level 4 like in in a year. **These do it over a number [of years]. You know they build the experience, they would become more rounded coaches.**”*

This approach was perceived to be successful, however, was perceived to be modest and thus, does not capture the headlines.

*“The issue you got with that is, it isn't sexy. **It gets no headlines**, it's not ATP ranked top 50 players suddenly transitioning at the end so they can say they're doing something at elite level, you know to get the profile, but it's giving you a far more rounded and better experienced workforce, with both the coaching degree or whatever, the sports degree, experience working, they've been trained to be proper coaches rather than a quick transition across. And **when they do finish playing they can hit the ground running because of the training they've received over time.**”*

This approach at the LTA, was deemed to be successful, as the athletes are trained as coaches to be retained within the workforce once they finish their athletic career. This model also means athletes reap the benefits of having a dual career:

*“Whereas **when obviously it's as we described within that pathway** [simultaneous to still being an athlete], like we do at TASS, **they get all the benefits of doing that dual career** that you know someone who just is doing another type of dual career would get, so you know they've got that **more balanced lifestyle, they've got hopefully increased well being because they're focusing on different aspects in their life and they've got development opportunities to develop different life skills...**It also helps reduce the possibility of you know when they do retire, they have that crisis moment of actually what what's next?”*

Additionally, this model also benefits the National Governing Body, as they have time to observe and develop their athletes into coaches, while still being a cheaper pathway.

*“It's in simple terms, **the governing body gets a longer look at them and they get a longer look at the coaching pathway** rather than in six months you go oh ***** , I need to find something. I'm retiring and get thrown into something. You do six months and then it all falls apart. You know there's a much more bonding closer development in it. It's also cheaper. Because their students...they're not, **you're not having a retired athlete who now needs to be paid. That's still a cheap pathway.**”*

For this type of model to work in other sports, TASS described one key success factor: opportunity.

*“It is the **opportunity at the end of the career for them to transition into the workforce.**”*

Challenges to the Dual Career Athlete to Coach transition Model:

TASS explained very few 'true' dual career athlete to coaching training programmes exist for many reasons. Firstly, there is not a large enough demand for National Governing Bodies to organise and run this training programme. As said previously, not all elite athletes want to become coaches, and equally National Governing Bodies only need so many coaches, and so in many sports it would not be viable to run athlete to coach training programmes.

*"We shouldn't assume that everyone from that sport you know has finished their career, Elite career, now it's become a coach and I think you know they're actually **there are not that many people that maybe would want to do that [become a coach]**, and I think, as I said previously, **it is more about workforce development**. So actually, from you know their, **the NGB standpoint, they only want a couple of those elite former players to then transition into coaching, so I'm not sure they have their resources to put in place that program if that makes sense**"*

Additionally, there are challenges associated with retaining the athletes in the programme.

*"Has that coach started delivering at elite level and is that coach still doing it? So we say there's **very few that can do it or want to do it to start with, there's very few that then continue and finish the training, there's even fewer that are staying here**, so you might you have a real issue getting ten to start with, you're not going to end up at 10 at the other end, you'll be lucky to have one"*

Finally, in many sports, coaching is not an attractive career for many athletes.

*"**the volume [of coaches] to make it worthwhile as a program**, so something like modern pentathlon. We have to, you know, we might luckily get 1 athlete at Bath University, if we're lucky, you know that wants to [become a coach] and the demographics of modern pentathlon and the history, you know it's not what they want to do."*

Personal Qualities: what makes a successful athlete to coach transition?

The TASS representative described the main quality which they deemed to be important for a successful transition from athlete to coach:

*"**a good coach, it's not a job, it's a vocation** and the ones going through, they've identified this is their vocation. Their graft in their work, in their building the knowledge, coming in at elite. If the hearts not in it, technically they might be alright, **but the heart's not, maybe not there, so therefore they don't last.**"*

Discussion

In this project, two National Governing Bodies and one sporting organisation were interviewed about their dual career pathways, with a specific focus upon athlete to coach transition.

Dual Career or Retired Transition: Athlete to Coach Transition?

However, there was conflict among the organisations as to what is dual career. A dual career pathway, means athletes are supported to not only reach their full athletic potential, but simultaneously supported to achieve other skills and qualifications (Olympic Athlete 365 – [Dual Career - Athlete365 \(olympics.com\)](#)). By this definition and in agreement with TASS, the two models by Scottish swimming in case study one and International Tennis Federation in case study two related to athlete to coach training were not dual career; as this education programme was delivered once athletes had retired.

There are many benefits to being a dual career athlete. These benefits include health and psychological benefits, improved ability to cope with adversity, strengthened identity, an expanded social network, opportunity to improve skills and education, and improved prospects of employment (Morris et al., 2021). Athletes therefore taking part in athlete to coach training programmes once they have retired, do not, potentially gain as many of the benefits from having a dual career.

The model at the Lawn Tennis Association, which is explained by TASS in case study three, involves athletes who are still competing also taking on the Pro-Player Coach Programme. More information about this programme can be found here: [Tennis programme combines competition with career development \(tass.gov.uk\)](#).

Although limited, the following links contain information from different National Governing Bodies on athlete to coach training programmes. Some of these are solely for retired elite athletes, while others are a dual career model:

- [Athlete to Coach Programme \(welshathletics.org\)](#)
- [International Player to Coach Programme Kicks Off at St. George's Park \(thefa.com\)](#)
- [New coach placement scheme for BAME players launched \(premierleague.com\)](#)
- [Athlete to Coach | UK Sport](#)

Volume of Coaches?

A key finding, consistent in all three interviews, was the perception that not many elite athletes want to become coaches. Many elite athletes consider coaching their sport as a career, because of their lack of options after retiring, and their uncertainty on what happens next.

“I've had conversations with people who say I don't really know what I want to do, I might just coach almost as a sort of that's OK, because I'll be familiar with that, it usually doesn't last for too long” (Scottish Swimming- Case study One).

“Many of them eventually they're gonna end up being tennis coaches. And what happens in Tennis is that especially at the top level, these guys, one day they are players and on the following day are coaching. So, these guys, they don't even have a coaching certification or qualification” (International Tennis Federation- Case Study Two).

“There are not that many people that maybe would want to do that [become a coach]” (TASS- Case Study Three).

Quotes like these show athletes often fall into coaching, as a safety net once they have finished competing, often however without qualifications or experience. This often means, they lack elements of coaching skills and knowledge but also, are unsure if it is the career for them. TASS (case study three) explained this often leads to an unsuccessful athlete to coach transition. Providing a true dual career programme to athletes may therefore prevent this ineffective transition; athletes who decide to commit to coaching can have years to learn the skills of the trade before they retire and start the role, and therefore prevent this emergency transition. However, a challenge for National Governing Bodies, is to create a viable pathway for a small number of athletes who do wish to commit to coaching. TASS explained, often small numbers of athletes wish to participate in athlete to coach programmes.

The Hurdles and Challenges of a Successful Pathway

All three interviews provided information on how their dual career pathway operates, as well as the success stories and challenges they face. It was clear from the data, that creating a successful dual career athlete to coach training programme is complex. Aside from creating a viable pathway with a small number of athletes as spoken about previously, the logistics of this pathway depend upon the nature of the sport.

In case study two, the International Tennis Federation described difficulties in creating and organising this structure. The difficulties included scheduling and timetabling issues with the level of training and traveling athletes must fulfil, ensuring qualifications were accepted and accredited to ensure athletes could utilise them, language difficulties and finally, the complexity of the education courses as athletes have often been away from academia for many years. Each sport and National Governing Body will have their own difficulties in creating a successful athlete to coach pathway because of the intricacies and nature of the sport.

Conclusion

There are very few true dual career athletes to coach training programmes. Most athlete to coach programmes are offered to retiring athletes who wish to transition into coaching quickly, as their athletic career ends. Although these programmes have success, it was argued that perhaps a dual career transition into coaching would be more successful; whereby athletes who are still competing, learn the coaching trade over several years and reap the benefits of a dual career.

Recommendations for ambitious badminton coaching educations

The aim of this section is to compile the information and conclusions from the six analyses and provide recommendations for anyone who wants to create ambitious badminton coaching education like the ADVANCE Badminton Coaching Education. The section will be divided into four topics with information coming from one or more of the analyses. References to the different analyses will not be made, but the reader is encouraged to have a closer look at the six analyses for a deeper understanding if needed.

Need for ambitious badminton coaching educations

- There seems to be a close relationship between having well-educated coaches and the number of registered players. It shows the importance of having a strong badminton coaching education system that can educate good badminton coaches.
- The majority of the Badminton Europe Confederation's Members Associations are interested in badminton coaching education and willing to implement an ambitious badminton coaching education system. Even Members who already have a badminton coaching education in place are interested in implementing a new and high-level badminton coaching education.
- The European top nations' badminton coaching education systems show that significant formal education is needed if great coaches have to be educated. Especially, when focusing on educating coaches who can make an impact in a strategic level in a coaching environment or when coaching the best talents and players in the world.

Structure of the badminton coaching education

- A structure that combines virtual and face-to-face interaction is interesting from the perspective of education managers, coaches and players who want to make the transition into becoming coaches.
- Keeping the duration as short (1 x 10 month) as possible is preferred compared to spreading it over more years (2 x 10 months).
- The preferred duration and frequency of the face-to-face meetings are 4 meetings of 5-6 days during the education period of 10 months.
- A mentoring programme where the coaches have the possibility to be mentored by experienced coaches is of high interest, especially because such programmes do not currently exist in badminton coaching education systems.
- There is a tendency that the more experienced a coach is, the less frequent the coach needs to meet with the mentor. For coaches with some coaching experience, the frequency would be from every two weeks to once per month.
- Not all topics are suitable for virtual learning. It is accepted by education managers, coaches and current and former international players that topics such as "Technical" and "Tactical" are more suited for face-to-face learning.

Content in the badminton coaching education

- A holistic and ambitious badminton coaching education must cover the following topics:
 - Technical
 - Tactical

- Physical training
- Sports psychology
- Children and juniors physical, mental and social development
- Anatomy and Biomechanics
- Training planning
- Pedagogy and didactics
- Personal coaching philosophy
- Assessment

All top European badminton coaching education systems are having those topics covered to some extent.

- "The topics of importance vary depending on the experience level of the coaches for whom the education is intended. For new coaches, topics such as "Technical" and "Tactical" must have the highest priority. For experienced coaches, the "Technical" and "Tactical" topics are still important but a topic such as "Personal Coaching Philosophy" must also have a high priority.
- "Entrepreneurship" will be seen as a new and innovative topic, but probably also a topic with some resistance at first. The topic does not have a high priority in the existing badminton coaching educations and is currently not a high priority topic for badminton coaches. So how to include and present such a topic in a badminton coaching education must be carefully considered.
- "Nutrition" will be another innovative topic which currently does not get much attention in the top European Coaching education systems.
- The philosophy behind the assessment of the candidates must be carefully considered. The assessment process must fall in line with the education philosophy of the education. So basically, whether the assessment is considered as a "checkpoint" where the coaches get a certificate that allows them to coach on a certain level or entering a new education, or the assessment becomes an education and development tool, so that the coaches get feedback on how they can further grow as coaches.

Additional dual career considerations

- No real dual career programmes exist. Most dual career programmes focus on retired athletes. So, it seems that there is a need for well-organized dual career programmes if current top athletes are to be take a badminton coaching education while still actively playing.
- Having an education system that understands the stress and pressure of being an international player with not much time for education is crucial. Flexibility is the key word for making a badminton coaching education dual career friendly. Flexibility can come in terms of virtual learning but also flexibility towards deadlines for assignments. However, international players understand and accept that some topics must be learned in face-to-face sessions.
- The timing of the face-to-face meetings during the year is important as it must respect the important competition periods. The face-to-face meetings are best suited for off-season training periods.
- It is preferable to have the education in the first two years of an Olympic cycle rather than when Olympic qualification begins. During that time, there is not much time to engage in an ambitious badminton coaching education.

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