

## 1 A Taxonomy of Dual Career Development Environments in the United Kingdom

2 Throughout the athletic career, it would be extraordinary for an athlete to avoid the  
3 combination of their sporting career with either an education or a vocation. To conceptualize  
4 the overlap between educational or vocational development and sporting development, a dual  
5 career (i.e., the combination of education or vocation alongside a sporting career) has the  
6 potential to commence during compulsory education, approximately age 8-15 (depending on  
7 the sport), when young aspiring athletes' transition from initiation to development stages of  
8 the athletic domain and commence their competitive sporting career (Wylleman et al., 2013).  
9 Additionally, many young athletes often continue their dual career into higher education.  
10 Whether through choice or as a financial necessity, elite athletes in non-professional or non-  
11 funded sports and sub-elite athletes are required to maintain a vocational career whilst  
12 maintaining their sporting careers. If adequately managed, a dual career can provide  
13 individuals with protection from wellbeing issues. A premature commitment to an  
14 exclusively athletic identity (i.e., a foreclosed identity) has negative consequences for  
15 individuals' abilities to cope with adversity (Brewer et al., 2000; Lally, 2007; Park et al.,  
16 2013; Petitpas & France, 2010; Stambulova et al., 2012). Through the development of  
17 interests outside of sport, athletes are likely to develop a multi-dimensional identity and a  
18 wider social network which can be drawn upon in situations of adversity, such as injury or  
19 deselection (Knights et al., 2016; Lally, 2007; Taylor et al., 2005). Additionally, the  
20 exploration of interests outside of sport can help athletes in forming more concrete career  
21 plans in their preparation for life after sport (Aquilina & Henry, 2010; Torregrosa et al.,  
22 2015).

23 While the benefits of dual careers are evident, research has also identified various  
24 challenges associated with combining two time and energy-consuming careers, specifically: a  
25 lack of time for social life (Cosh & Tully, 2014; Ekengren et al., 2018; Kristiansen, 2017;

1 Ronkainen & Ryba, 2018); a lack of time for rest or recovery and, therefore, feelings of  
2 fatigue (Cosh & Tully, 2014; Ekengren et al., 2018; Kristiansen, 2017; Sorkkila et al., 2017;  
3 Sorkkila et al., 2018); and coaches and / or academic staff not supporting decisions to pursue  
4 a dual career (Knight et al., 2018; Graczyk et al., 2017; Ronkainen et al., 2018; Singer, 2008).  
5 Hence, it is vital that researchers and practitioners alike comprehensively understand the  
6 support mechanisms available for dual career athletes. This necessity to support the  
7 development and optimization of dual career delivery has been recognized at a political level  
8 through the European Commission's practice guidelines (European Union Expert Group:  
9 Education and Training in Sport, 2012). In practice, particularly within the UK, various  
10 organisations and institutions have been developed to support dual career athletes in  
11 managing these two demanding careers.

12 Thus far, the research has, primarily, focused on the individual factors that impact the  
13 athletes' experiences of dual careers. A recent critical review of the European literature has  
14 called for an increased recognition of the impact environments can have on dual careers  
15 (Stambulova & Wylleman, 2019). Specifically, investigation of dual career development  
16 environments (DCDEs) could provide researchers and practitioners with a greater  
17 understanding of the factors that facilitate development and performance within a dual career  
18 and, therefore, the areas that require optimization within current practice. DCDEs are defined  
19 as purposefully developed systems that aim to facilitate athletes' investment in combining  
20 their competitive sporting career with education or work. In order to provide a comprehensive  
21 understanding of DCDEs, research has promoted the benefit of understanding the network of  
22 DCDEs that exist in practice and their key features (Morris et al., 2020). For researchers, this  
23 would enable meaningful comparisons of like-for-like environments and aid the identification  
24 of effective practices. This, in turn, could enable dual career stakeholders and service  
25 providers to identify current gaps in dual career support and optimise dual career practice.

## 1 **British Context**

2           While a European taxonomy is valuable in providing a basis for terminology and  
3 understanding the overall approach of Europe, due to the varying approaches to dual career  
4 support that exist (Aquilina & Henry, 2010), it is also important to understand environments  
5 within a particular context. With this in mind, the purpose of this research is to explore  
6 DCDEs within the British context. In the UK, the education system is split into four parts:  
7 primary education, secondary education, further education, and higher education. Primary  
8 and secondary education are mandatory in the UK. In Scotland, at the age of 16, students can  
9 choose to remain in education for a further two years (in either college or school) or leave  
10 school and enter employment. Whereas in England, Northern Ireland, and Wales all 16 to 18-  
11 year olds are required to maintain full-time education, either in a school or college setting or  
12 through a work-place apprenticeship. These post-16 options are categorized as ‘further  
13 education’, which is a requirement of studying at the higher education level. The UK has over  
14 100 university and college institutions that constitute the higher education network. These  
15 institutions offer a range of courses which include, foundation, undergraduate, postgraduate,  
16 and doctoral or postgraduate research degrees.

17           In terms of sport, each of the four home nations (England, Northern Ireland, Scotland,  
18 and Wales) have a designated department which monitors and provides funding for the four  
19 regional sports councils: Sport England, Sport Northern Ireland, Sport Scotland, and Sport  
20 Wales. These councils are responsible for the spectrum of sport, from grassroots to elite  
21 performance. Also, there is a national sports council that is responsible for high-performance  
22 sport across the UK, UK Sport. UK Sport distributes government funds to World Class  
23 Performance Programmes based on that sport’s potential to achieve a medal at an Olympic  
24 Games. In addition to these organisations, each sport has a national governing body (NGB)  
25 that is responsible for coordinating the network of clubs in the UK and will contribute to both



1 positioned in the philosophical realm of critical realism, which assumes that there is a reality  
2 independent of our knowledge of it (ontological realism). But that our knowledge is theory-  
3 laden and fallible (epistemological constructivism; Maxwell, 2017).

#### 4 **Data Collection**

5 First, an initial taxonomy of the DCDEs identified across the UK was developed via  
6 documentary analysis. This initial taxonomy was then validated via interviews with DC  
7 experts, practitioners, and coordinators. A final focus group was conducted to develop an  
8 understanding of the practical considerations of different DCDEs.

9 **Stage 1: Initial taxonomy development.** To identify the types of DCDE within the  
10 UK, first, the authors collected data from in excess of 95 publicly available documents,  
11 including national and regional elite sports organisations or institutes websites, government  
12 reports, and academic papers that focused on dual career development environments. A  
13 deductive coding process (Braun et al., 2016) was undertaken where data was input into a  
14 qualitative standardized table based on pre-defined categories from previous literature (viz.,  
15 centralized vs decentralized, age group targeted, educational level targeted, sports included,  
16 level of state involvement, support for vocation included, nature and scope of environment,  
17 fixed or flexible provision, and source of funding) and dual-career provision provided (e.g.,  
18 what support was provided). An initial national taxonomy of the DCDEs was then developed  
19 based on the DCDE classifications and the athletic and educational stages that the  
20 environments primarily targeted.

21 **Stage 2: Taxonomy validation.** Following the development of the initial national  
22 taxonomy, the first author then conducted interviews to develop a greater understanding of  
23 the DCDEs in practice. Participants (n = 4) were purposefully selected based on the following  
24 criteria: (1) 5+ years involvement within a sports agency, or educational institution which  
25 provides dual career support; and (2) experience working within or with a sports agency or

1 federation that supports athletes in one or more region (England, Northern Ireland, Scotland  
2 or Wales) of the UK. These inclusion criteria were important to ensure that participants held  
3 experience and understanding of the dual career context at a managerial level, and an  
4 understanding of the approaches across the UK.

5         The selected participants had worked at a managerial level within the dual career area  
6 for between 5 and 15 years and were all male. Each participant attended a face-to-face  
7 interview, lasting between 34 mins and 69 mins. The initial national taxonomy, developed in  
8 stage 1, became the focus of conversation. The interviews were transcribed verbatim and  
9 coded via the deductive coding approach adopted in stage 1. Based on these interview  
10 findings, adjustments were made to the national taxonomy, including adjusting the age-range  
11 targeted by environments and the inclusion of elite sports schools into the Scottish taxonomy.  
12 Furthermore, based on the interview discussions, it also became apparent that the four home  
13 nations had different approaches to dual careers and different access to DCDEs; therefore,  
14 regional taxonomies for England, Northern Ireland, Scotland and Wales were developed.

15         **Stage 3: Practical considerations.** To address the second aim of the research, to  
16 provide practical considerations for dual career practitioners working within DCDEs in the  
17 UK, a focus group was conducted with dual career practitioners, who had either experience as  
18 a lifestyle advisor, sport psychologist or dual career coordinator. Seven participants took part  
19 in the focus group with between 2 and 10 years experience as a DC practitioner. Four  
20 participants had experience of multiple roles (e.g., as a lifestyle advisor and a dual career  
21 coordinator) and two participants had experience working in multiple environments. The  
22 focus group lasted 47 minutes and focused on the practical considerations of DCDEs within  
23 the UK.

24         **Research Quality**



1 and performance; viz., sports friendly schools, sport friendly universities, and defence force  
2 programs), or (c) a combined dual career development systems (i.e., an organisation or  
3 institution that works in tandem with both sport and education / vocational providers to  
4 deliver an all-round support package to the individual undertaking the dual career; viz., elite  
5 sports schools / colleges, and combined dual career systems).

6 Insert Figure 1 about here

7 Professional club programmes and players' union programmes were most commonly  
8 available in the largest professional sports across the UK, (e.g., football, cricket, and rugby).  
9 Whereas, national sport programmes were more commonly found in lottery-funded sports  
10 (e.g., cycling, rowing, and sailing). These programmes are funded and governed by the  
11 respective national sports federations of the four regional sports councils, Sport England,  
12 Sport Northern Ireland, Sport Scotland, and Sport Wales. Sports-friendly universities were  
13 scholarship programmes are based at and funded by the university. Depending on the sport  
14 and the level of competition, the dual career athlete could be training and competing within  
15 the university environment (i.e., in the national university league, BUCS), or they could have  
16 a separate sporting environment (i.e., their club or team is a separate organisation). A limited,  
17 but recently increased, number of universities in the UK (e.g., University of Bath, Leeds  
18 triathlon centre, Loughborough University) have developed links with national sports  
19 programmes including national sporting governing bodies (e.g., British Swimming, British  
20 Triathlon) or national institutes for sport (e.g., English Institute of Sport, Sport Scotland).  
21 These links provide the opportunity for (student-)athletes to combine higher education with  
22 world-class sporting facilities and dual career support (see Brown et al., 2015). These formal  
23 links also enable effective communication between the educational institution (in this case,  
24 the university) and the sporting organisation (in this case, the national sport programme).

1 Insert Figure 2 about here

2 Results suggested there is one combined dual career system within the UK. The  
3 system, Talented Athlete Scholarship Scheme (TASS), functions solely within England. This  
4 organisation is a government-funded programme which, along with providing sport science  
5 and lifestyle support, facilitates formal relationships between sporting NGBs, who are  
6 responsible for sports development, and educational institutions, who are responsible for  
7 academic development. This formal relationship means that while the sporting and academic  
8 environments are separate, there are strong lines of communication between the two  
9 organisations. In England, Sports friendly schools were often private or independent schools,  
10 which usually require tuition fees or a scholarship for attendance. These schools were not  
11 commonly linked with sporting organisations or federations. An exception to this was  
12 identified in Scotland, where various secondary schools across Scotland have an established  
13 relationship with the Scottish Football Association (SFA) to enable formal communication to  
14 take place. There was only one identified example of an elite sports school, found in  
15 Scotland, the Glasgow School of Sport. In this case, the school environment is purposefully  
16 designed for supporting young athletes and their athletic development alongside school-aged  
17 education. The school specialized in five sports, athletics, badminton, gymnastics, swimming,  
18 and hockey. The TASS network currently provides the only example of a formal system to  
19 combine sport with a vocation in the UK, via its collaboration with the British Army.

## 20 **Practical Considerations**

21 **Person first approach.** For DC practitioners working on a one-to-one basis with their  
22 DC athletes, the type of environment that the DC athlete was embedded within was to some  
23 extent irrelevant.

24 “When doing that initial needs analysis or meeting with them in my head, I’ve  
25 not got that they belong to one environment or another particularly, I just see

1           them as an athlete that is trying to develop in a certain way and what can I do  
2           to help them. It might be further down the line where some of them get specific  
3           support, for example the medical insurance, but in that initial meeting there's  
4           no difference for me." (Sport Psychology Practitioner)

5   Practitioners aimed for a person-first approach within their support, rather than  
6   focusing on the type of environment the athlete was embedded within. However, it  
7   was important for them to understand the type of support available to the DC athlete  
8   so that they empower the athlete to access this support.

9           **Practitioner roles within environments.** A key difference between DCDEs within  
10   the UK was the types of DC practitioners that might work within an environment. For  
11   example, within combined dual career environments or national sport programmes it would  
12   be expected that there were specialist practitioners for strength and conditioning, lifestyle,  
13   sport psychology, nutrition and physiotherapy. However, it was considered unlikely that a  
14   sport-friendly school would have this amount of practitioners. Instead, it would be more  
15   common for a sport friendly school to have a DC coordinator or coach who coordinates  
16   access to DC support.

17           "In terms of our staff in those environments [sports friendly schools], they are  
18           DC coordinators, they are not qualified lifestyle advisors or anything like that.  
19           They are there purely to coordinate that DC system really... They will 9 times  
20           out of 10 be PE teachers..." (DC coordinator)

21   DC coordinators can be faced with the challenge of not having specialist training or  
22   knowledge. This could be addressed through collaborations with combined DC environments,  
23   sport-friendly schools or sports-based environments that might have this knowledge.

1           **Working with athletes that are supported by multiple environments.** For DC  
2 athletes that are not supported by a combined DC environment, they could be offered support  
3 from both a sport-friendly university (i.e., a university sport scholarship) and a sport-based  
4 programme (e.g., a professional sport club or national sport funding).

5           “There’s so many people that are providing the same or similar support. That  
6 can be quite conflicting at times, depending on how that’s approached. That  
7 could be facilitated, but again depending on who it is. Ultimately you could  
8 have university support, you could have [national sport funding] support.”

9           (Sport Psychology Practitioner)

10 As the quote suggests, while access to multiple environments can be beneficial, this  
11 disjointed environment approach requires coordination by either a practitioner  
12 through establishing lines of communication with stakeholders or the athlete  
13 themselves.

14           **Integration into an environment.** A challenge for any DC practitioner was  
15 integrating themselves within the environment, however, the organisational structure could  
16 either facilitate or hinder the practitioner’s ability to embed themselves into an environment.  
17 For example, at an education-based environment, DC practitioners are likely to be working  
18 with DC athletes from multiple sports. Whereas, a DC practitioner within a sport-based  
19 programme is more likely to be working with athletes from one sport.

20           “[In the [national sport programme] they [practitioners] are very  
21 integrated into that sport specifically, they are on site when they are  
22 training, they probably know the athletes a lot better and the nuances of  
23 that sport. Whereas when I was working as a PL [performance lifestyle]  
24 at [sport friendly university], at any one time I could be responsible for  
25 50 athletes and they’re from 25 different sports. It’s almost impossible to

1 get to know your athlete on an individual basis when you're not  
2 integrated in that environment." (Performance Lifestyle Practitioner)  
3 While working with athletes from multiple sports could hinder the practitioner's integration  
4 into the athlete's environment, two other factors were also identified. First, practitioners also  
5 felt that engagement with DC athletes was facilitated by having a centralised environment  
6 with the presence of a a multi-disciplinary team.

7 Second, practitioners also discussed that being able to be present within the sporting  
8 environment (e.g., at training sessions and onsite within an environment) can facilitate  
9 building relationships with athletes.

10 "Whereas [sport club], I'm there all the time so I can just grab them  
11 quickly walking to the pitch or as they come out of the physio room. So  
12 you're able to build those relationships." (Sport Psychology Practitioner)  
13 Therefore, centralised environments where practitioners are on the same site could facilitate  
14 practitioner integration and developing relationships with DC athletes. This was also  
15 facilitated by practitioners being contracted full-time to an environment so that they could  
16 focus on building relationships with DC athletes.

## 17 Discussion

18 The current study identified eight types of DCDEs present in the UK education and  
19 sporting systems. National and regional taxonomies (Figure 1 and 2, respectively) of these  
20 DCDEs in England, Northern Ireland, Scotland, and Wales were also developed. Results  
21 suggested that the eight types of DCDEs are not present in all four regions of the UK. The  
22 developed taxonomies provide a detailed overview of the nature of DCDE environments  
23 across the UK and a framework for further, more detailed, exploration of specific  
24 environments. Further, the results of this study enable practitioners within the dual career,  
25 sporting, and educational contexts to gain an understanding of the different types of

1 environments they work with and the key features of each. The research also explores the  
2 practical considerations of DCDEs in the UK. While practitioners might aim for a person-first  
3 approach in supporting DC athletes, the organisational structure of the environment they  
4 work within can impact their ability to: integrate into and environment, become a part of a  
5 multi-disciplinary team, and build relationships with DC athletes.

6 Previous research (Aquilina & Henry, 2010), investigating the national approaches of  
7 European countries to dual careers during higher education, classified the UK approach as  
8 *national sporting federations/institutes as an intermediary*. This classification presented the  
9 UK as having an established system of recognized channels for sporting governing bodies or  
10 national institutes of sport to act on behalf of the student to negotiate flexible educational  
11 provision with higher education institutions. The current study extended the exploration of  
12 approaches from higher education to the exploration of approaches to supporting dual careers  
13 at various stages across the dual career lifespan (from school and vocational stages).  
14 Consequently, the current study extends the research literature and provides a comprehensive  
15 understanding of the DCDEs that exist in the British context. The identification of more  
16 diverse environments could also be reflective of the recent investment in sport provisions in  
17 the UK.

### 18 **Practical Implications**

19 The national and regional taxonomies developed here also provide an understanding  
20 of the areas for optimization of support within the DCDE network, in particular, the stages of  
21 dual career development which are currently under-supported or not supported at all. First,  
22 across the UK, there were no identified examples of DCDEs that support athletes during  
23 primary education. While for many sports this is not considered to be necessary, for early  
24 specialization sports (e.g., gymnastics), the period during primary education could be a  
25 critical period in their sporting development. A further consideration in this regard is the

1 potential risks of early sport specialization, such as social isolation, overdependence, burnout,  
2 and perhaps the risk of overuse injury (Malina, 2010). By not holistically supporting athletes  
3 in early specialization sports, negative consequences such as these could be undiscovered,  
4 unsupported, and untreated. The development of systems or environments to support  
5 primary-aged athletes should, therefore, be a consideration for sporting organisations,  
6 particularly NGBs of early specialisation sports.

7 A key difference between the European taxonomy (Morris et al., 2020) and the UK  
8 taxonomy (while there are greater differences at the regional levels) is the existence of only  
9 one elite sport school in the UK model (based in Scotland). The majority of school-aged  
10 athletes in the UK are, therefore, either supported by a sport friendly school or a school that  
11 would not be defined a DCDE. For schools that would not be defined as a DCDE, dual career  
12 athletes would receive limited formalised support from the school. The practical challenge  
13 that this highlight by this study is the difficulty for athletes to understand what support is  
14 available at school for athletes. Currently, a small handful of private schools have a  
15 reputation for successfully supporting athletes, but there is no national approach for  
16 supporting athletes at the school level.

17 The DCDE taxonomies in the UK also highlighted a lack of support for the  
18 discontinuation athletic phase, i.e., the phase after the transition out of sport. Some national  
19 sport programmes offered a continuation of their support to athletes in this phase for short  
20 periods (i.e., six months up to 1 year after), but this is the extent of the support of this athletic  
21 stage that was identified in this study. Supporting this athletic stage should be a consideration  
22 for sporting organisations, mainly due to the challenges and risks to mental health that  
23 athletic retirement presents to athletes (see Park et al., 2013; Wylleman, 2019). Finally, while  
24 there is dual career support for athletes in a vocation from national sport programmes and  
25 players' union programmes, these are both sport-based DCDEs, and only one example of a

1 vocation-based environment was identified across the UK, TASS Army. As a result, there is  
2 only one environment that formally offers an adapted vocational environment for athletes  
3 wanting to combine sport with work. Further, this adapted environment is limited to a  
4 military career. The necessity to better understand dual careers in sport and work has already  
5 been recognized in the research (Stambulova & Wylleman, 2019), but the current study also  
6 highlights the need to develop more diverse environments, within the UK, to support this  
7 group in practice.

8         The regional taxonomies (Figure 2) also suggest a reliance on sport based DCDEs,  
9 particularly in Northern Ireland, Scotland, and Wales. Due to the funding system for Olympic  
10 sport in the UK, sport-based programmes and NGBs receive funding proportionate to their  
11 potential to achieve medal performances and based on their performance at previous Olympic  
12 Games. As a consequence, these sporting organisations can focus on sporting performance  
13 rather than holistic development. Recently, sporting organisations have been criticized for  
14 promoting a culture of achieving in sport ‘at all costs’ and failing to protect athletes’ mental  
15 health and wellbeing (Grey-Thompson, 2017). Furthermore, this culture could present a  
16 challenging narrative to the benefits of dual career, for example, a need to sacrifice education  
17 or vocational pursuits in order to achieve at the elite level. While this is not the case for all  
18 sport-based DCDEs, if sporting organisations, who support dual career athletes, do not  
19 consider a holistic approach to supporting athletes, the over-reliance on sport-based DCDEs  
20 could present a barrier to dual careers and athlete mental health.

### 21 **Strengths and Limitations**

22         A strength of the present taxonomies lies with the comparisons that can be made  
23 between the UK and the regional taxonomies within the UK. Sports friendly schools were  
24 seen in three out of four regions but were not identified in Northern Ireland. As a result,  
25 school-aged aspiring athletes in Northern Ireland are required to rely on sport-based DCDEs

1 to support them and could be lacking in educational support or flexibility that facilitates a  
2 dual career. Whereas, elite sports schools were only seen in the Scottish system, meaning  
3 school-aged athletes in the remainder of the UK could suffer from the lack of purposely  
4 designed support for sporting and educational development that elite sport schools offer.  
5 Similarly, combined dual career systems were only identified in England, meaning student-  
6 athletes in Northern Ireland, Scotland, and Wales could be experiencing difficulties  
7 associated with a lack of formal communication between sporting and educational  
8 environments.

9         The use of publicly available data in the current study presented a challenge for data  
10 collection. In many cases, information on dual-career systems and environments were  
11 difficult to identify due to a lack of transparency on sporting and educational organisations'  
12 websites. While this was addressed in the current study through interviews with national  
13 experts, this still presents an implication for dual career athletes. Without clear information,  
14 dual career athletes are unable to make informed decisions regarding their dual career  
15 development and the support they might need. The taxonomy validation could have been  
16 strengthened with an increased sample size. However, the participant inclusion criteria for  
17 stage 2 and 3 required a specific area of expertise in dual career practice, which only a limited  
18 number of people within the UK would have. This strict inclusion criteria means that the  
19 participants in this study were experts in the field of dual careers and added to the applied  
20 value of the research.

### 21 **Future Research**

22         The current study provides findings that address the recent call for an environmental  
23 perspective of dual careers in sport (Stambulova & Wylleman, 2019). Further investigations  
24 of specific DCDEs are required to identify the environmental factors that facilitate a dual  
25 career (Morris et al., 2020). The present study provides future research, conducted within the

1 UK, common terminology and a categorisation system that can enable like-for-like  
2 comparisons between DCDEs. For example, comparing education-based systems with other  
3 education-based systems. For researchers outside of the UK, the current study and Morris et  
4 al., (2020) provide examples of developing and validating DCDE taxonomies at both the  
5 trans-national and national level. Research should also further consider the effectiveness of  
6 different DCDEs in supporting dual career athletes sporting, educational/vocational, and  
7 personal development, and the factors that affect the success of these types of environments.  
8 The current taxonomies provide an overview of the DCDEs across all sports within the UK.  
9 As stated, some sports, such as early specialization or late specialization sports, could have a  
10 distinct pathway of DCDEs. Therefore, it could be beneficial to develop sport-specific  
11 taxonomies to provide a sport-specific understanding of the types of DCDEs available to dual  
12 career athletes, and further support informed career decision making for dual career athletes.

### 13 **Conclusion**

14 In conclusion, the current study presents a framework of classification for DCDEs  
15 within the UK. Eight types of DCDEs were present in UK education and sporting systems,  
16 but regional taxonomies show a different availability of these DCDE types in England,  
17 Northern Ireland, Scotland, and Wales. Some key areas that lacked support, include  
18 environments that support early specialisation sports, environments that support athletes after  
19 retirement, and vocational-based environments. Furthermore, practitioners are required to  
20 navigate organisational barriers to integrating within and environment and building  
21 relationships with DC athletes. While this research provides a framework for DCDE research  
22 within the UK, more detailed analysis of the effectiveness of different environments would  
23 benefit research and practice.

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