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## Intervention in physical education and sport: trends and developments in a decade of Francophone research

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**A decade of French-speaking researches on intervention in sport (2000 – 2010)**

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Key-words : intervention, researches, literature, PE, sport

Summary for practitioners

This paper proposes a systematic inventory of communications presented during six ARIS French-speaking congresses (Association for Research on Intervention in Sport) from 2000 to 2010. More than 800 communications were presented, which reflect the multiple facets of the intervention in physical education and in sport. A quantitative content analysis of scientific programs (n = 836 abstracts) was processed by Sphinx® software (5 analysis dimensions; 22 items). The treatment of the data consisted of univariate and bi-variate analysis. The research field on intervention in sport is characterized in an indisputable way by a beautiful expansion during this decade. The topics studied in PE, coaching and training are very diversified and analysed by complementary approaches. The qualitative and comprehensive researches are particularly well developed. We shall also discuss in this article of the delicate relationship between the practitioners and the researchers.

26

27 Abstract

28 This paper proposes a systematic inventory of communications presented during six ARIS  
29 French-speaking congresses (Association for Research on Intervention in Sport) from the  
30 years 2000 to 2010. More than 800 communications were presented, which reflect the  
31 multiple facets of the intervention in physical education and in sport. This legible inventory  
32 of the researches on intervention can help us to identify needs and orientations for futures  
33 studies and to position the French-speaking publications with regard to the English-  
34 speaking literature. We can consider with Berthelot (2008) that the scientific activity is not  
35 a social activity as the others ; it presents a certain specificity by trying to produce more  
36 and more rational knowledge. Finally, it recovers from a pragmatics (a theory of action)  
37 which wants simultaneously social, historic, contextualist but also rationalist. A quantitative  
38 content analysis of scientific programs (n = 836 abstracts) was processed by the Sphinx®  
39 software toward 5 analysis dimensions : (1) informations relative to the main author, (2)  
40 the nature of the communication (research, innovation report, literature review, personal  
41 opinion, epistemological reflection); (3) the aim of the research (assess the efficiency of  
42 the practices, transform the practices, describe and/or explain to understand the  
43 practices); (4) the methodology and (5) the theme of the research. The treatment of the  
44 data consisted of univariate (frequencies, percentages) and bi-variate (chi square statistic)  
45 analysis to spot possible significant relations between variables. The results show that the  
46 research field on intervention in sport is characterized in an indisputable way by a beautiful  
47 expansion during this decade. They bring to light specificities of the French-speaking  
48 researches on intervention in sport: they are essentially descriptive and comprehensive,  
49 using the qualitative methods. The topics studied in PE, in coaching and in training are  
50 very diversified and analyzed by complementary approaches. We see here the sign of an  
51 undeniable wealth, the crossing of different theories and methods allowing a better

52 understanding of the educational phenomena. We shall also discuss in this article of the  
53 delicate relationship between the practitioners and the researchers. We observe a clear  
54 and progressive increase of the researches presented during the congresses (from 55,6%  
55 in 2000 to 91,5% in 2010), whereas the other kinds of communications (literature review,  
56 epistemological reflexion, innovation reports, personal opinion) seem to disappear. If the  
57 distance between researchers and practitioners seems to get bigger, the trainers can play  
58 a decisive role in the articulation between practice and research.

59

60

## 61 **1. Introduction**

62 During the 90s, several congresses on intervention in physical education and in sport were  
63 organized in the francophone world. A community of practitioners, trainers, students and  
64 researchers interested in the educational practices in sport was progressively constituted:  
65 the association for research on intervention in sport (ARIS) was created in 1999. It groups  
66 French in the major part, but also Canadians, Belgians, Portuguese, Tunisians, Swiss...

67 This association puts a lot into the following missions:

- 68 - promote and become known the researches concerning the system of the intervention in  
69 the field of the physical and sports activities as well as of the human motricity (physical  
70 education, training, leisure activities, adapted physical activities...);
- 71 - facilitate and develop the relations between all the researchers and the practitioners  
72 interested in these researches in the field of the physical and sports activities, by arousing  
73 exchanges and by underlining the wealth of the professional experiences;
- 74 - assure a help at the level of the definition of programs of research, the distribution and  
75 the exploitation of their results;
- 76 - develop the relations with the other researchers' communities of physical and sports  
77 activities, with the intention to value the researches on intervention in sport.

78 The notion of intervention gradually stands out as a key notion in the field of the sciences  
79 of the motricity, the sport and the teacher training. In the 70s, it is the Canadian  
80 researchers who chose to use the operational word of "intervention " for PE teacher  
81 training. They wished to gather three roles still perceived as three different specialities: the  
82 planning, the teaching and the assessment. The notion of intervention then widened in a  
83 more theoretical reflection about what is the transmission of skills about physical and  
84 sports activities in various fields for the benefit of varied public: " Intervention means any  
85 action and individual or collective situation to one or several persons engaged in a sports

86 and physical activity, and aiming at modifications of this activity. These actions are of  
87 different natures according to the contexts within which they take place, persons whom  
88 they address, intentions of the participants and the nature of the envisaged modifications.  
89 These intentions can be of education, reeducation, coaching and performance, active  
90 lifestyle and leisure, recuperation" (Durand, 1998).

91 Since 2000, the association for research on intervention in sport organizes biennial events:  
92 more than 800 communications were presented from 2000 to 2010 during six congresses.  
93 They reflect the multiple facets of the intervention in physical education and in sport.  
94 Throughout this decade, the researchers developed programs with diversified approaches.  
95 That's why the members of the ARIS decided to create in 2007 the observatory of the  
96 researches on intervention in sport (ORIS) to emphasize the wealth of these plural  
97 orientations. French-speaking researchers have already proposed several analyses of the  
98 published papers in physical education pedagogy (Marsenach & Amade-Escot, 1993 ;  
99 David, Bouthier, Marsenach & Durey, 1999 ; Bouthier, 2001 ; Amade-Escot & Amans-  
100 Passaga, 2006). This wider study focused on the the different fields of the intervention (i.e.  
101 PE, coaching, training...) studied by the ARIS association (2000 – 2010).

102 It was led within this observatory, and provides a multifaceted view of the field, by leaning  
103 on quantitative data. The purpose of the ORIS observatory is to describe and interpret the  
104 evolution of the researches on intervention in sport in varied contexts and to gather the  
105 scientific produced knowledge. This tool of scientific monitoring allows to characterize the  
106 activities of research in emergence, in processing or in obsolescence, with the ambition to  
107 result in the long term on a real and fruitful interaction between practices and researches.  
108 This legible inventory of the field of the intervention can help us to identify needs and  
109 direction for futures study and to position French-speaking publications trends with regard  
110 to the English-speaking literature.

111 We shall show that the researches on the intervention in sport are interested in varied  
112 objects by leaning on a plurality of methodological frames. By comparing the data of this  
113 observatory with the American studies (Kulinna & al., 2009 ; Ward & Ko, 2006 ; Silverman  
114 & Skonie, 1997 ; Silverman & Manson, 2003 ; Macdonald & al., 2002), we shall bring to  
115 light certain specificities of the French-speaking researches.

116 We can thus wonder if the researches on intervention in sport can be considered as social  
117 constructions (Goodson, 1988). The social dimension is certainly essential in the scientific  
118 activity. Berthelot (2008) arms itself moreover with a triple point of view to specify the  
119 scientific activity as social activity, by combining the contributions of the philosophy and  
120 the sociology:

121 (1) The scientific activity is subjected to collective standards, that they are intellectual,  
122 institutional or cultural. So, to be recognized as researcher, it is advisable to respect  
123 certain rules of scientificity and justifiable models at some point;

124 (2) The scientific activity is integrated into a situation of interaction, direct or indirect,  
125 which engenders rules governing the behaviors. Interactions between the participants,  
126 since the informal exchanges within a laboratory until the debates during congresses,  
127 influence the development of the scientific activity;

128 (3) The scientific activity is turned to others, with an intention. The researches are  
129 subjected to others to be assessed, then they are published in scientific reviews and are  
130 the object of debates during congresses.

131 If these three positions send back to different theoretical frameworks, we can however  
132 admit that researchers, according to their intentions, weave between them, in the  
133 situations where they are, interactions with specific rules, while integrating institutions and  
134 organizations, which define collective norms.

135 Can we assert for all that the science is a " social construction "? If the expression of  
136 "social construction " knew in the 1980s and 1990s a considerable development in

137 domains highly varied since the publication of the founding book *The social construction of*  
138 *the reality* of Berger and Luckmann in 1966, it is henceforth debated. According to Hacking  
139 (2001), the notion of social construction became a vague and indistinct idea, which  
140 oscillates between commonness (" everything is construct, nothing is objective ") and  
141 radicality (" nothing is false, nothing is true "). This philosopher and sciences historian  
142 points out in his book *The social construction of what?* that this expression is not still used  
143 in a relevant way, as we are interested in objects in the broad sense (the persons, the  
144 practices) either in the ideas that we are made of these objects (concepts, theories). He  
145 proposes then a space where can coexist and articulate reality and social construction. It  
146 is thus necessary to wonder about the pertinence of the notion of social construction  
147 according to the studied domain. Can we assert that the scientific activity is a social  
148 construction, that means a fragile and intersubjective creation, " where everything would  
149 replay all the time, when everything would reinvent in every interaction with actors and in  
150 singular contexts " (Lahire, 2005)? It is not nevertheless possible to deny the weight of the  
151 lived experience and incorporated representations. Indeed, if the programs of research are  
152 influenced by the dialogs and debates or the conversation among scholars during  
153 congresses and meetings, they depend also on the history of the considered scientific field  
154 and on that of the researchers. Can we consider that the science would be in reality only a  
155 social construction as the other one, a speech on the reality, reflecting faiths shared and  
156 interested in a group given at some point? The scientific constructions base on more  
157 reflexivity, of explicitation and of argumentatives and empirical proofs than the other  
158 constructions, less demanding from the point of view of the effort of the demonstration  
159 (Lahire, 2005). Also, Berthelot (2008) defends that the scientific activity is not a social  
160 activity as the others ; it presents a certain specificity by trying to produce more and more  
161 rational knowledge. Finally, it recovers from a pragmatics (a theory of action) which wants  
162 simultaneously social, historic, contextualist but also rationalist. The researchers



163 recompose gradually programs of researches by integrating recent scientific knowledge  
164 with the aim of producing more and more rational knowledge about the intervention in  
165 sport.

166

## 167 **2. Methodology**

168 The corpus was established from the scientific programs of six ARIS congresses :

- 169 1. Congress of Grenoble (Fr) « *The intervention in the field of the physical and*  
170 *sports activities: competence(s) in transformation?* », December 14-15-16th,  
171 2000 : 144 abstracts ;
- 172 2. Congress of Rennes (Fr) « *Sports and artistic cultures - Formalization of the*  
173 *professional Knowledges - Practices, Trainings, Researches*», December 12-  
174 14th, 2002 : 139 abstracts ;
- 175 3. Congress of Louvain – La - Neuve (Bel) « *Intervene in the physical, sports and*  
176 *artistic activities - Practices - Researches - Trainings*», January 20-21-22nd,  
177 2005 : 138 abstracts ;
- 178 4. Congress of Besançon (Fr) « *Co-construct the knowledge: the professions by*  
179 *the intervention in the physical, sports and artistic activities* ", May 9-10-11-12th,  
180 2006: 157 abstracts ;
- 181 5. Congress of Rodez (Fr) « *The intervention in sport and its institutional contexts:*  
182 *cultures and peculiarity of the action* », May 14 - 15 - 16th, 2008: 149 abstracts ;
- 183 6. Congress of Sherbrooke (Ca) «*Live active and in health at any age and in all the*  
184 *circles of life* », May 27-30th, 2010: 106 abstracts.

185

186 The content analysis (Bardin, 2001 ; Weill-Barais, 1997) of 836 summaries was realized  
187 with the Sphinx software<sup>1</sup>. After several floating readings, 22 items in the form of closed  
188 questions (essentially multiple choices) were informed through five dimensions of analysis:

- 189 1. General informations about the communication (congress, gender and profession  
190 of the main author, institution and country);
- 191 2. The nature of the communication (research, innovation report, literature review,  
192 personal opinion, epistemological reflection);
- 193 3. The aim of the research (assess the efficiency of the practices, transform the  
194 practices, describe and/or explain to understand the practices);
- 195 4. The methodology of the research (data collection and treatment);
- 196 5. The theme of the research, according to the analyzed context (PE, coaching,  
197 teacher/trainer training).

198 The software offers an environment to code the texts according to the preconceived  
199 variables and categories. The quantitative treatment of the data consisted of univariate  
200 (frequencies, percentages) and bi-variate (chi square statistic) analysis to spot possible  
201 significant relations between variables.

202

### 203 **3. Results**

204

#### 205 3.1. An international community of research in expansion

206 If French are widely represented during congresses, we notice a more and more important  
207 participation of the other nationalities, in particular the Canadians and the Belgians. All in  
208 all, it is 18 nationalities and more than hundred of research laboratories which are  
209 represented. International collaborations between several research laboratories (joint-  
210 management of thesis, common research project, compared education studies...) are

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<sup>1</sup> We thank Jean-François Robin and Sophie Richard (University of Paris 12) for their precious help in the data capture.

211 fruitful by gathering theoretical and methodological tools. But laboratories specialized in  
212 the field of intervention in sport remain little represented in the research world. We count  
213 about twenty French-speaking research teams on intervention which publish regularly  
214 during each congress (between 15 and 60 communications from 2000 to 2010). So, the  
215 field of the research on education developed well with many international associations of  
216 research, but the researchers have to continue to fight in the universities of the whole  
217 world to defend this still marginalized field (Kirk, Macdonald & O'Sullivan, 2006).

218

219

### Figure 1

220

221 The figure 1 shows that students (essentially PhD students) represent a third of first  
222 authors. This important proportion of young researchers is very promising for the  
223 development of the research on intervention in sport. In fact, the young researchers seem  
224 particularly active both in the French-speaking world and in the English-speaking world.  
225 Macdonald and al. (2002), Kulinna and al. (2009) confirm this increasing  
226 internationalization of research reviews, postgraduate students and employment  
227 opportunities in universities. On the other hand, about 40% of first authors are researchers  
228 (22,7% of assistant professors and 16,9% of professors). Finally, it is the trainers (15%)  
229 and the practitioners (teachers : 4%, coaches : 1%) that are under-represented. Most of the  
230 trainers develop at the same time a double activity of teaching and researching in the  
231 universities (Master's degree, thesis), particularly in the european context of the training  
232 by/for research. There also, this datum is encouraging because the trainers play a decisive  
233 role in the relation between practice and research : they can help the practioners to  
234 analyze the practices toward scientific tools and knowledge. At last, the low percentage of  
235 practicionners shows how much it is difficult for the teachers and trainers to put a lot into

236 the research. We shall discuss later in this article this low and disturbing participation of  
237 the professionals of intervention.

238

239

## Figure 2

240

241 Figure 2 presents the percentage of men and women publishing as first author from 2000  
242 to 2010. On average, only a third of first authors (34%) is feminine. But it is interesting to  
243 note the encouraging increase of the percentage of women as first author : from 22,2 % in  
244 2002 to 46% in 2010. The comparison of these data with those of Ward and Ko (2006) in  
245 the Unites States brings to light similarity. These authors study the percentages of men  
246 and women publishing as first author in the American review JTPE (Journal of Teaching in  
247 Physical Education) and observe also that however the distribution between men and  
248 women become more and more balanced, women publish less than their male colleagues.  
249 The women have entered the academy much later that the men ; these spend a higher  
250 percentage of time engaged in research activities, whereas women spend more time  
251 teaching and providing service activities (NCES, 2000). The inequity relative to women's  
252 opportunity to publish persists in both English-speaking and French-speaking worlds of  
253 research on intervention, as moreover in numerous disciplines.

254

### 255 3.2. Evolution of the kinds of communications

256 Figure 3 shows a clear and progressive increase of the percentage of researches  
257 presented during the congresses (from 55,6% in 2000 to 91,5% in 2010). The research  
258 field on intervention in sport is characterized in an indisputable way by a beautiful  
259 expansion during this decade. Thesis students, researchers and trainers choose to expose  
260 their whole research by following the classical model (introduction / methods / results /  
261 discussion) to become academically recognized as contributors to scientific knowledge.

262 But at the same time, the other communications (literature review, epistemological  
263 reflexion, innovation reports, personal points of view about teaching, training..) seem to  
264 disappear. By comparison, the percentage of researches published in the American  
265 Journal of Teaching in Physical Education is less important (68% according to Ward & Ko,  
266 2006). We can wish that the different kinds of communication are presented, because  
267 they reflect complementary analyses of the practices. It is not evident to favor the relations  
268 between researchers and practitioners ; it's particularly difficult for practitioners who didn't  
269 develop a research activity to participate to the debates during congresses. That's why the  
270 trainers play a decisive role to spread the scientific knowledge in universities.

271

272

Figure 3

273

274 3.3. Contexts studied in researches on intervention in sport

275

276

Figure 4

277

278 Three main contexts of the intervention in sport are studied (figure 4): the PE (more half of  
279 the researches), the training (24,9 %) and the coaching (19,2 %). So, the ARIS association  
280 gathers numerous researchers who study the PE. This trend can be explained by the fact  
281 that most of the researchers on intervention have a professional experience in PE  
282 teaching. They turn thus quite naturally to studies on the PE. In certain countries, as in  
283 France, the PE teachers intervene exclusively in the second degree, contrary to other  
284 countries as Canada where they intervene in the first and second degrees. The  
285 researches on the PE in primary school (20 % of the researches on the PE) are thus  
286 particularly more developed by the Canadians. As the ARIS wants to gather researches on

287 sport in various contexts of intervention, we can wish that researches on coaching,  
288 physical adapted activities or leisure activities develop in the near future.

289

### 290 3.3.1. Research themes in PE

291

292

#### Figure 5

293

294 The data treatment shows a wide range of topics investigated, with 6 themes which  
295 represent each more than 10 % of the researches. 40% of studies are centred on the  
296 teacher activity, particularly during the interactive phase of the teaching (instruction and  
297 classroom management, teaching planning and assessment) and on the teachers  
298 knowledge. But the current researches are not any more focused exclusively on the  
299 teaching or on the teacher, but also on the student activity (30% with perceptions and  
300 learning strategies), the physical content knowledge (16,4%), the gender (10,4%) and the  
301 teacher-students interactions. This moving from a focus on teaching toward a focus on  
302 teachers and students is also noted in the study of the American Journal of Teaching in  
303 Physical Education (Ward & Ko, 2006), but in a less marked way. Kulinna & al. (2009)  
304 observe that the dissertations on teaching in PE have focused on teacher effectiveness,  
305 but there has been a recent movement to enhance the initial studies on motor skills  
306 through studies of student attitude, cognition, decision making and emotion. The evolution  
307 of the scientific paradigms (e.g. the process – product paradigm, the teacher thinking  
308 paradigm, the mediating process paradigm and the ecological paradigm, according to  
309 Cloes & Roy, 2010) allowed to develop the themes of researches and to seize better the  
310 complexity of the intervention.

311

### 312 3.3.2. Research themes in coaching

313 Figure 6

314

315 Contrary to the results observed in PE, it is the activity of the participants (athletes) that is  
316 more studied than the activity of the educator, with two main research themes:

317 - the activity of the athletes is firstly studied (34,1%): what are the significant structures of  
318 the activity of the athletes? What do they think of their coaches? Which kind of knowledge  
319 do they mobilize?

320 - the second theme " coach intervention" (26%) is essentially centred on the choices, the  
321 strategies and the adaptations of the coach during the interactive phase with the  
322 sportsmen.

323 This trend can be explained by the aim of performance in the field of the coaching: the  
324 scientific knowledge concerning the perceptions and the strategies of the sportsmen  
325 should contribute to improve the results of these.

326

327 3.3.3. Research themes in training

328

329 Figure 7

330

331 Concerning the field of the training, the researchers analyse mainly the pre-service training  
332 of PE teachers. The in-service training remains enough little studied (7,5 % of researches  
333 on training). Nevertheless, the need for professional development of physical education  
334 teachers in particular has been highlighted in a number of recent reports (O' Sullivan,  
335 2008), which noted there is better value to be gained by investing in professional  
336 development than in lengthening pre-service preparation.

337 As the researchers teach in universities, they need to understand how the future teachers  
338 begin and perceive their teaching activity. They thus study much more the beginner

339 teachers activity (about 60%) that the trainer activity (14%). They quite particularly wish to  
340 study the professional development of beginners (36,9%), then the students activity  
341 (strategies, perceptions : 21,3%) and the trainer – students interactions (7,5%). On the  
342 other hand, they try to improve the training (innovating training: 16,9%) by experimenting  
343 several kinds of interactions students-trainer or researcher-trainer.

344

#### 345 3.4. The aims of the researches

346 We leaned on the works of Bru (2002) and Astolfi (1993) to distinguish three aims of the  
347 researches:

348 (1) to assess the efficiency of the practices;

349 (2) to transform the practices and to innovate;

350 (3) to describe / explain to understand the practices.

351 Concerning the aim “to assess the efficiency of the practices”, the researchers compare  
352 different practices (e.g. constructivist practices / technicist practices) to identify the most  
353 successful. They also estimate the effects of the practices on learning (e.g. impact of the  
354 reflexive activity of students or of tutelage) and measure the effects of innovating programs  
355 (health education) in different contexts (PE, coaching, teacher education ...).

356 When the researchers want to transform the practices, they analyze a professional  
357 problem, propose an innovation and finally observe the effects of the experimentation.

358 These innovations concern the didactic treatments of various sports activities (reflexion  
359 about physical content knowledge, teaching methods, settings, assessment...) and the  
360 teacher education (collaborative researches between teachers and researches, interaction  
361 modalities between the student and the trainer, the help to the novice teachers...).

362 At last, the researchers describe / explain the practices to better understand the activity of  
363 the professionals (planning, management of the groups, instruction, communication,  
364 assessment, professional development) and different publics as students or sportsmen



365 (experiences, perceptions, strategies, linguistic interactions). These researches are  
366 qualified as heuristics.

367

368

### Figure 8

369 Figure 8 shows that 80 % of the researches is in aim heuristic. These data do not evolve  
370 during the decade. In front of complex, uncertain and autonomous practices, it's difficult for  
371 the researchers to prescribe intervention strategies to the practitioners, because the  
372 generalization of results obtained in a singular context remains very problematic. That is  
373 why they turn more and more to descriptive / explanatory and comprehensive researches,  
374 anchored in authentic contexts. They wish to seize the complexity of the human practices  
375 and to describe very finely, by case studies, the activity of the individuals in natural  
376 context. This type of research is major in the field of the intervention in sport, because the  
377 activity partially shapes in relation with the specificities of the contexts. The impossibility to  
378 check numerous variables in unpredictable environment explains why the other types of  
379 researches are thus rarer. Indeed, it is not because a teaching method is effective in a  
380 class that it will be it for all that in another class. It is the same problem for an innovation,  
381 that could give variables effects according to the considered public. This important  
382 proportion of researches heuristics can also be explained by the necessity of better  
383 understanding at first the system of the intervention before proposing transformations.  
384 Nevertheless, we can wonder so more balance between the two aims of the researches  
385 "to understand the practives" and "to transform the practices" would not be desirable in the  
386 longer term. If the researches heuristics can constitute relevant resources to question the  
387 practices of intervention and thus eventually transform them, they remain little known by  
388 the trainers and all the more the practitioners. The researches with transformative aim, by  
389 taking into account the results of comprehensive researches, elaborate and estimate  
390 various modalities of intervention or training in several APSA, or still invite the practitioners

391 to collaborate throughout the process of research. Through these propositions or  
392 reflections, most of the professionals can certainly conceive more easily than the  
393 researches may present a social utility.

394 This orientation of the French-speaking studies towards the descriptive and  
395 comprehensive researches contrasts sharply with the American researches. Indeed,  
396 Silverman and Manson (2003) analyze more than 500 theses in PE from 1985 till 1999.  
397 They underline the ascendancy of researches centred on the efficiency of the teacher  
398 (92,5 %), among which 42,8 % of researches centred on the comparison of various  
399 teaching methods and 23,4 % of descriptive researches, while 4 % of the researches  
400 concern the cognition of the teacher and 3,5 % the development of tools for the  
401 intervention. To note that another study of Silverman and Skonie (1997) analysing 179  
402 articles of research in PE published between 1980 and 1994 ends in similar trends.

403 The difference of studied periods cannot explain completely the important variation about  
404 the aims of the researches: the French scholars produce essentially descriptive and  
405 comprehensive researches while the Americans focus on the efficiency of the teaching.  
406 We can put the hypothesis that the research practices are historically and culturally  
407 situated. Every field of research has its own trajectory (Kirk, Macdonald and O' Sullivan,  
408 2006) and develop certain paradigms and theoretical frameworks according to the political,  
409 cultural, historic and social context of the country.

410

### 411 3.5. A crossing of research methodologies

412 Figure 9 illustrates the methods of data collection implemented in the researches. Two  
413 techniques are widely spread with a significant difference: the interview (56,4 %) and the  
414 observation (54,2 %). Questionnaires, written tracks (documents, programs, articles) and  
415 tests are much less used (respectively 22,6 %, 14,6 % and 7,2 %). These stabilized

416 results, from 2000 till 2010, show that the majority of the researchers cross the  
417 observations and the verbalizations to analyze the intervention in sport.

418

419

### Figure 9

420

421 So, the researchers try to approach in closer the complexity of the practices. They  
422 integrated that the observation of the behaviour is not any more enough for understanding  
423 the practices. In fact, the researchers cross two different techniques, sometimes 3 or even  
424 more. 39 % of the researches combine the observation with the interview (mostly the  
425 observation in authentic context with an interview of auto-confrontation or a semi-directive  
426 interview). Other forms of methods crossing are less often used: interview and analysis of  
427 documents (14,6 %) ; interview and questionnaire (13,9 %) or observation and analysis of  
428 documents (12,2 %).

429 This "triangulation" of data extracted from different sources represents a relevant strategy  
430 of validation in qualitative research (Huberman and Miles, 1991 ; Van Der Maren, 1995 ).  
431 "The triangulation consists in redrawing the most causal possible chain (...) by trying to  
432 obtain more than a type of measure from more than a source for every link of the chain "  
433 (Huberman and Miles, 1991, p. 427). It is supposed to confirm a result by showing that the  
434 independent measures that we made it go to the same sense, or at least do not contradict  
435 themselves and allows to estimate better the credibility of the results.

436 The French-speaking researches in the field of the intervention are more qualitative than  
437 quantitative. Indeed, at least a quarter of the researches are dedicated to case studies and  
438 another quarter is interested in small samples, lower than 30 individuals. This trend is  
439 inverted in the US even if the qualitative researches tend to develop recently. The use of  
440 the quantitative methods doubtless dominate the researches in PE (approximately 18 % of  
441 qualitative researches according to Silverman & Manson (2003) and Ward & Ko (2006).

442 We can suppose that more and more researches on intervention will cross quantitative  
443 and qualitative methods to benefit from the complementarity of these two types of  
444 methodologies.

445

#### 446 **4. Conclusion**

447 The purpose of this article was to present an inventory of the communications produced  
448 during the first six ARIS congresses from 2000 till 2010. The results show that the  
449 scientific activity in the field on the intervention in sport is in expansion and they bring to  
450 light specificities of the French-speaking researches: they are essentially descriptive and  
451 comprehensive, using the qualitative methods. The topics studied are very diversified and  
452 the same topics can be analyzed by different and complementary approaches. We see  
453 here the sign of an undeniable wealth, the crossing of different theories and methods  
454 allowing a better understanding of the educational phenomena.

455 On the other hand, the professionals seem less and less present during the congresses.  
456 Nevertheless, the second mission of the association ARIS consists in facilitating and in  
457 developing the relations between all the researchers and the practitioners interested in the  
458 researches in the field of the physical and sports activities. It thus seems today  
459 inescapable to facilitate the exchanges between professionals and practitioners. But it is  
460 not easy to become known these results of researches with the practitioners. These  
461 difficulties can be explained by the fact that the professionals and the researchers do not  
462 exercise the same job and thus do not pursue the same purposes. The professionals have  
463 to resolve everyday and in the urgency various problems. A minority of them participate in  
464 congresses and train in research. The research often appears as remote from the reality,  
465 without utility for the practice. As for the researchers, little publish in the professional  
466 reviews, not recognized in the university context. They rarely have the opportunity to  
467 address specially the professionals to present and discuss their works. Nevertheless, it is

468 not possible to conceive the training without taking into account the numerous and current  
469 researches on the intervention. Certainly, the results of researches cannot be considered  
470 as prescriptions or ready-made solutions because of the specificities of each context of  
471 intervention. The professional knowledge is not a linear translation of scientific knowledge  
472 which would be simplified. It results from a complex process of transformation and its  
473 appropriation passes by an interbreeding with faiths, personal conceptions and a dialectic  
474 perms with the experience (Collinet, 2006). Better to know and to understand the  
475 practices, to investigate the possible can help the professionals of the intervention to  
476 question their activity and to shape tools to analyze finely the practices.

477 This first inventory of the researches presented during ARIS congresses deserves to be  
478 completed by a reflection on the mobilized theoretical frames. This following project has  
479 just been realized by the members of the ORIS, who gathered in the book " sciences of the  
480 intervention in PE and in sport: results of researches and theoretical foundations" (Musard,  
481 Loquet and Carlier, 2010) 10 complementary theoretical approaches: 1) the ecological  
482 paradigm (Cloes & Roy), 2) the psycho-sociological approaches of teaching (Dupont,  
483 Delens, Tessier & Cogérino), 3) the cognitive anthropology (Gal, Sève, Cizeron & Adé), 4)  
484 the clinic of activity (Lémonie & Robin), 5) the semiotic approach (Alin & Wallian), 6) the  
485 clinic didactic of PE (Terrisse, Carnus & Loizon), 7) the socio-didactic approach (Poggi,  
486 Verscheure, Musard & Lenzen), 8) the cultural anthropology (Léziart), 9) the technological  
487 approach (Mouchet, Amans-Passaga & Gréhaigne) and 10) the didactic in PE and in  
488 physical and sport activities (Amade-Escot & Loquet). We consider with Eid & Diener  
489 (2006) that those multiple paradigms to investigate research questions are very promising  
490 by providing complementary perspectives and data.

491

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