

PHYSICAL EDUCATION TEACHERS IN TUNISIA CONCEPTION OF TRAINING ACTORS AS A SOURCE OF VULNERABILITY

Abstract

Tunisia became a French protectorate in 1881, which has ended in 1956. This led Tunisia to ensure the education of the young Tunisians and, as a consequence, to ensure an efficient training of the future teachers. Until nowadays, this project did not lead to satisfying outputs, especially in the case of PE. The present study thus aimed to examine possible vulnerability of the training of PE teachers in ISSEPs. This was done by using semi-directed interviews to take into consideration the point of views of major players in the training (*i.e.*: the directors of the ISSEPs, trainers and students) regarding teacher training in the ISSEPs.

The results of a lexical analysis (Alceste2012plus©) completed by a categorical analysis showed that these interviewees are aware of weaknesses of the training of PE teachers in ISSEPs. However, each type of interviewees considered that these difficulties are not linked to itself but rather to another type of interviewees or to causes originated from the outside of the training itself. Such potentially conflicting point of views were also found to be formulated on the base of a consensus regarding PE as the interviewees implicitly consider PE as a sport initiation (or as a sport training). However, this consensus, probably anchored in the mentalities since the independence of Tunisia, is not consistent with the target set by the Education Act of 2008.

As a consequence, this suggests the particular interest to make the training evolve as function of the requirements of PE teaching, which might require to promote an innovative form of training.

Keywords: PE Teachers, training adaptation, Tunisia.

1. INTRODUCTION

Tunisia was a French protectorate from 1881 to 1956 before becoming an independent State ([1]). Consequently, the Tunisian Government was obliged to ensure an autonomous development of the country. However during the protectorate few Tunisian natives were trained to contribute to such development ([2]) and even fewer ones were involved in the management of institutionalized education ([3]). In addition the enrolment rate in primary education (30%) was limiting future training of Tunisian managers who could replace French officials and administrators ([4]). Since 1958 this led the Tunisian political power to implement a series of reforms to liberalize the access to school education ([5]). Therefore teacher training became a main issue for the Tunisian State ([5]).

However, until nowadays, consecutive attempts to develop teacher training in Tunisia have not led to satisfying outputs. Difficulties to design a training that would integrate optimally the academic and professional contents led to successive institutional changes from the 1960s to the 2000s ([6]). After 2005 training was changed in order to adapt the Bachelor-Master-Doctorate (BMD) structure adopted

by the Tunisian universities. This contributed to hamper the optimization of teachers' training because the BMD structure was implemented in the absence of a consequent training of the trainers ([6], [7]).

Historically the training of the PE teachers in Tunisia has been developed in such dynamics. In the 1960s, PE, conceived as a sport initiation, was considered as a major educational mean for youngsters by the political power of Tunisia ([8], [9]). A politics of recruitment and of training was hence initialized to reduce the lack of PE teachers ([9]). The training duration was progressively increased from six months in 1957 to four years in 1990 and four Superior Institutes of Physical Education and Sport (French acronym: ISSEP) were progressively created (in Tunis, Kef, Sfax, and Gafsa) to ensure this four-year training ([4], [9]). However since 2005 the training duration has been reduced from four to three years in the framework of the BMD reform engaged by the Tunisian universities. The hourly volume of training was also reduced from 3210 hours to 2268 hours, a reduction which has increased the difficulty to design an efficient training ([10]).

Such difficulty has also been increased by other developmental choices regarding the Tunisian PE. On the one hand PE has been charged, since the Education Act of 2008, not only to provide access to sport but also to contribute directly to the learning of a series of methodological and social competencies ([12]). On the other hand the status and the teaching conditions of the Tunisian PE have progressively deteriorated and, in the mid-2000s, ISSEP students have had no longer the possibility to be recruited as PE teachers within five years after graduation ([13]). Such changes required substantial adaptations of the training in the ISSEPs that may have been limited by difficulties to put this training in accordance with the BMD reform running in the Tunisian universities ([6]).

In the 2010s the training of PE teachers in ISSEPs thus faced a series of difficulties. Part of these difficulties were contextual ones as they are linked to the initialization of a BMD reform or to the development of PE. It is also possible that the adaptability of the ISSEPs was not sufficient to overcome these difficulties especially as the ISSEP dynamic seemed to be weakened at the beginning of the 2010s ([13]). This may have induced difficulties internal to the ISSEPs to produce an adapted curriculum to train PE teachers.

In particular, such situation may have elicited affective reactions and resistance to change in the ISSEP actors, notably by challenging their representations of PE and/or of the training of PE teachers. Therefore this may have limited the capability of these actors to ensure an optimal adaptation of the training. The present study thus aimed to examine this possible effect on the ISSEP actors.

1 METHODOLOGY

The present study was approved by the Institutional Review Board of Claude Bernard University and the 34 ISSEP actors asked to participate to this study gave their informed consent.

Subjects

A total of 34 subjects were interviewed, representing the four main types of ISSEP actors: the directors of the four existing ISSEPs (D; one woman and three men), eight academics (A; two women and six men), 12 trainers specialized in sport technology (T; two women and 10 men), and 10 ISSEP graduates not yet recruited as PE teachers (S; five women and five men); each of the A, T, and S subjects was from the ISSEP of Tunis. The 34 subjects fully cooperated to the interviews that took place in Tunisia during the academic year 2017-2018.

Interviews

Semi direct interviews ([14], [15]) were realized to favour the expression of the subjects' points of view regarding PE training in ISSEPs. The subjects were interviewed separately, by the same interviewer, in a quiet room. The subjects were informed of the main lines of the study but remained unaware of any expected result.

Each interviewee was asked to react to a series of cards designed in accordance with Peirce ([17]), as in previous study of Souid, Alin, Liotard, and Fargier ([16]). A set of seven cards was presented to each interviewee who turned one of them at random and reacted to its content, then each subject chose another card and so on until the seven cards were turned. The cards content focused, on the one hand, on the goals, the conditions and structuration of the training, on the other hand, on the contents and methods of training (Fig. 1). Depending on the comments of the interviewee the interviewer could use

an interview guide (see: Fig. 1) with the aim to help further developments of an expressed idea ([15]). This allowed to consider the main indicators to characterize the quality of a training curriculum ([18]) at reaction level (see: [19]) through interviews that lasted from 30 to 45 minutes.

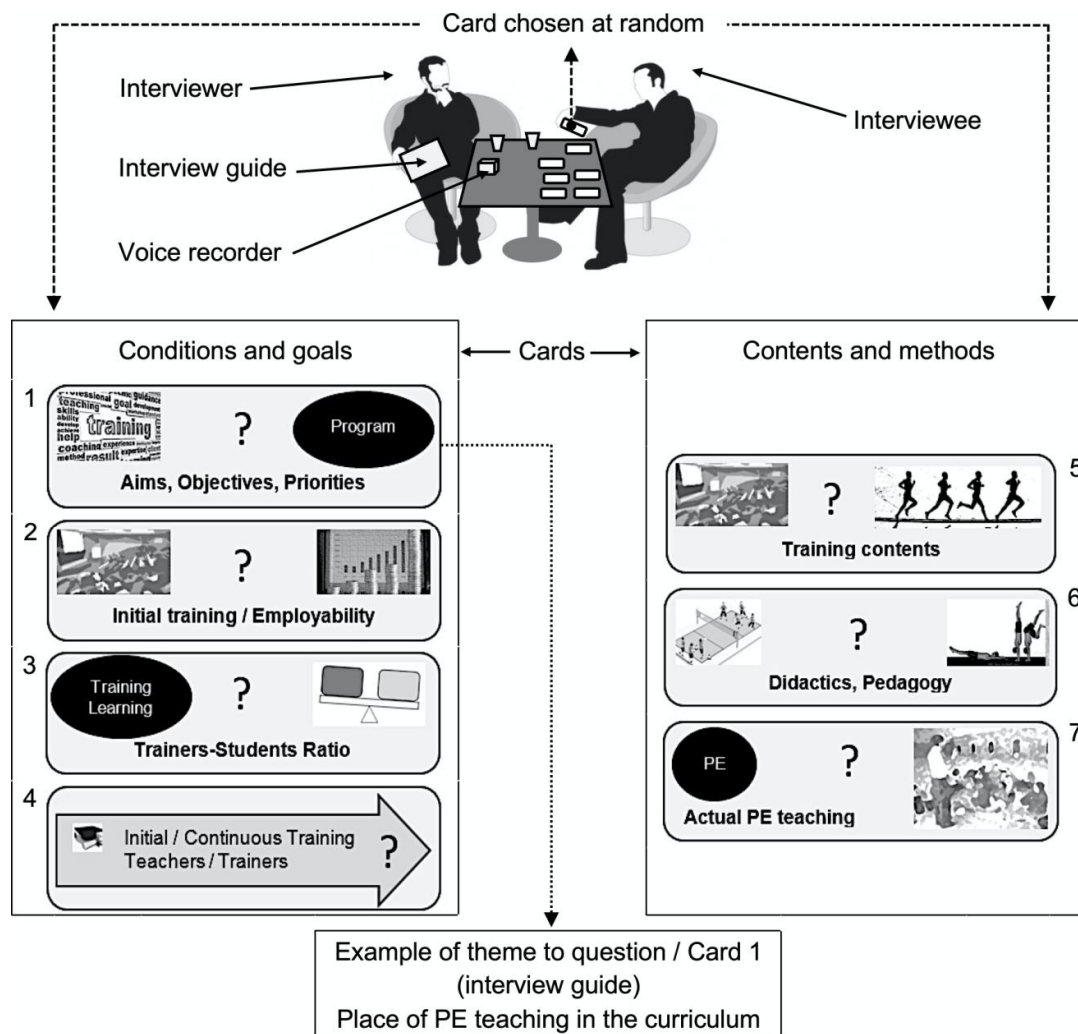


Figure 1 – Semi direct interviews: design and tools

Semi direct interviews were done to voice record the interviewees' points of view regarding PE teacher training in ISSEPs. The interviewees had to react freely to a series of cards chosen at random (the card contents were not visible initially and each card had to be returned). These cards were designed to induce interpretation of key-words, drawings, and/or photos, hence to favor the expression of personal feelings or thinks. Four cards were created to initialize comments regarding the goals of the training (Card 1), the achievement of these goals (Card 2), the training conditions (Card 3), and the global structure of the training (Card 4). Three other cards were produced to initialize comments on the contents and methods of training regarding the different types of ISSEP courses (Card 5), the teaching of physical activities (Card 6), and PE teaching in real conditions (Card 7). The interviewer could use an interview guide to help the interviewee to add precisions or complements, but not to induce the content of a reflection.

Content analysis

The interviews were transcribed to allow textual analysis with a specific software (Alceste2012Plus©) well-suited to analyze discourses at reaction level as in the present study ([20], [21]). The realization of this analysis included four main steps from the transcription of the interviews to the outputs ([20], [21]):

- 1. Transcription of the interviews in a unique .txt file and specific encoding of the interviewee type (external variables) at the beginning of each transcribed interview, *i.e.*: *D, *A, *T, and *S;
- 2. Determination of the lexemes to be analyzed by identifying the words in the file (the software using an internal dictionary), disambiguation (the polysemic words being analyzed in textual context) and lemmatization (leading to reduced forms from initial full-words);
- 3. Establishment of a Hierarchical Descending Classification (HDC): as the computations are based on the presence vs the absence of each lexeme in automatically predetermined text fragments [*i.e.*: elementary units of context (EUCs)], two HDCs were systematically done to verify possible sensitivity of the analysis to the EUC length.
- 4. Obtention of the data, collected as categories of lexemes with, for each category, a list of significantly associated lexemes (by Khi-square of association), including the associated types of interviewees (external variables), and a list of characteristic EUCs (determined by specific coefficient derived from Khi-square).

These outputs allowed a content analysis to give sense to the determined categories ([22]).

2 RESULTS

The analysis identified 105.407 lexical forms (5763 distinct forms including 2183 forms used only once, *i.e.*: hapax, which led, after lemmatization, to 1252 analyzed lexemes). The lexemes were distributed in six categories by HDCs (Fig. 2). These HDCs covered 71% of the EUCs (above the 50% threshold). In addition the HDCs showed weak sensitivity to the EUC lengths. Consequently the six categories examined thereafter can be considered as reliable (Fig. 2).

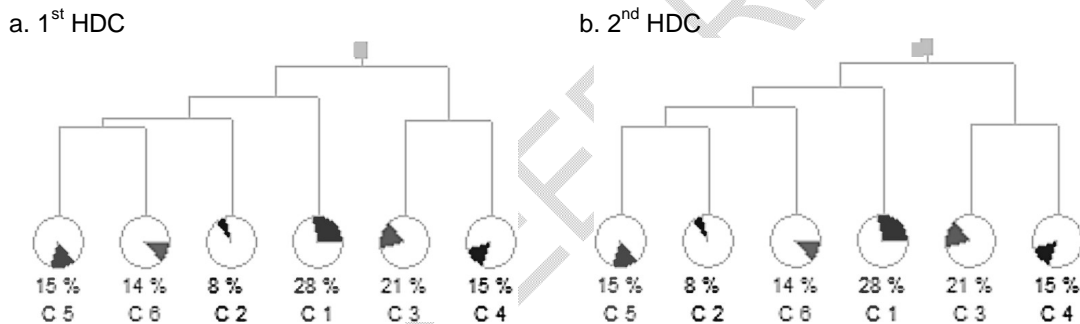


Fig. 2 – Results of the two computed Hierarchical Descending Classifications (HDCs)

The dendrograms given by Alceste2012Plus© show the consecutive steps of the two computed HDCs [by using elementary units of context (EUCs), of different lengths]. From the verbatim (transcribed interviews, indicated by ■) the software realized a first bipartition (first indentation under ■ in Figs. 2.a and b.), then, from the greater partition, a second bipartition, and so on until bipartition did not lead to improve HDC results. The dendrograms show that the HDCs only differ at the third-step level to differentiate the same three categories (C2, C5 and C6). Percent of UCEs linked to each category of lexemes are given and do not vary from one HCD to the other.

Categories of lexemes

Examination of the lexemes in each of the six categories (C) allowed a first approach of the themes linked to each C (Table 1).

The lexemes of C1-6 suggested that the discourses focused on: C1 – the teaching of sport activities in ISSEPs (*e.g.*: handball, running, semester, students); C2 – the internship in schools (*e.g.*: supervise, management, school, intern); C3 – the possibilities for ISSEP students after graduation (*e.g.*: master, doctoral, continuous, unemployment); C4 – the socioeconomic situation of the ISSEP graduates (*e.g.*: sport, club, salary, dinar); C5 – the learning of competencies to teach (*e.g.*: teaching, professional+, competent, learn+); and C6 – the ISSEP courses in different scientific domains (*e.g.*: psychology, physiology, sociology+, training).

Some lexeme in C1-6 also suggested that the interviewees developed critical thinking (*e.g.*: lack, deficient, marginalize), which can be verified by examining the EUCs characteristic of each C.

Table 1. Categories of lexemes: samples

C1	C2	C3	C4	C5	C6
session <i>196</i>	supervise <i>171</i>	master <i>132</i>	region <i>203</i>	teaching <i>126</i>	psychology <i>195</i>
semester <i>128</i>	management <i>154</i>	diploma <i>115</i>	sport <i>156</i>	professional+ <i>76</i>	science <i>156</i>
gymnastics <i>86</i>	quality <i>135</i>	continuous <i>109</i>	Tunisia <i>152</i>	competent <i>72</i>	physiology <i>133</i>
student <i>71</i>	school <i>101</i>	unemployment <i>102</i>	salary <i>125</i>	learn+ <i>60</i>	training <i>79</i>
sequence <i>66</i>	intern <i>79</i>	integration <i>101</i>	club <i>104</i>	knowledge <i>48</i>	biological <i>71</i>
year <i>62</i>	number <i>77</i>	seminar <i>82</i>	fitness <i>97</i>	mobilization <i>48</i>	sport <i>68</i>
second <i>60</i>	university+ <i>72</i>	research <i>78</i>	dinar <i>85</i>	context+ <i>42</i>	anatomy <i>55</i>
handball <i>60</i>	lack <i>47</i>	wait <i>75</i>	exploit <i>46</i>	thinking <i>40</i>	motor <i>52</i>
jump <i>51</i>	LMD <i>29</i>	doctoral <i>53</i>	money <i>45</i>	didactic <i>40</i>	content <i>50</i>
running <i>43</i>	deficient <i>25</i>	training <i>43</i>	marginalize <i>41</i>	attitude <i>37</i>	sociology+ <i>46</i>

Table 1 shows a sample of lexemes in each category (C1-6). In each C lexemes are listed by decreasing order of Khi-square values (in italic after each lexeme)

Characteristic EUCs

A series of EUCs were found to be characteristic of each category of lexemes (Table 2).

Table 2. Categorical analysis of the characteristic elementary units of context (EUCs)

C	Statements in the characteristic EUCs	n	Lexical themes
1	PE is a sport initiation Courses regarding sport pedagogy begin too late in the curriculum Prerequisites to take courses regarding sport pedagogy are lacking	25 12 9	Teaching of sport activities in ISSEPs
2	Internship in schools should be reorganized Human resources are lacking for internship Internship duration has been too reduced by the BMD reform	6 15 3	Internship in schools
3	Graduates must wait several years before becoming PE teachers Follow-up and training possibilities after graduation are lacking	3 38	Possibilities for ISSEP students after graduation
4	The graduates face socioeconomic difficulties Job opportunities suited for the graduates are lacking in Tunisia	13 12	Socioeconomic life of the graduates
5	Training must favour the acquisition of professional competences Training does not ensure professional efficiency	19 7	Professional competences
6	Multidisciplinary curriculum is required to train PE teachers Links between courses in scientific domains and PE are lacking	7 18	Courses in different scientific domains

n = number of EUCs;

Lexical themes = themes determined by analysis of the categories of lexemes.

Categorical analysis ([22]) of the characteristic EUCs (coefficients linking such EUCs to a category of lexemes varying from 102 to 18) led to determine the key-statements made by the interviewees (Table 2). This confirmed the six themes of discussion suggested by analysing the categories of lexemes (Table 2 / Lexical themes).

The analysis showed that 27.3% of the characteristic EUCs expressed a conception of PE as a sport initiation or of the training of PE teachers as requiring a multidisciplinary curriculum and/or as ensuring the learning of professional competencies (Table 2 / C1, C5, and C6). The analysis also showed that another 35.3% of the characteristic EUCs indicated perceived problems or difficulties regarding the graduates (Table 2 / C3 and C4). In addition, this analysis confirmed that the last 37.4% of the characteristic EUCs contained critical statements that were found to concern PE training (Table 2 / C1, C2, C5, and C6).

This led to further analysis taking into account the types of interviewees, *i.e.*: the external variables encoded to compute textual analysis (see § 2.3).

External variables

The textual analysis led to determine six categories of lexemes and the types of interviewees that were significantly associated (by Khi-square) to each category (Table 3).

Table 3. External variables: Khi-squares of association to each category of lexemes

	C1	C2	C3	C4	C5	C6
*A	- 44	14	3	- 16	35	3
*D	- 54	17	2	0	17	0
*S	38	- 9	- 8	2	- 33	6
*T	24	- 10	0	3	- 6	- 11

For each type of ISSEP interviewees (*A = academics; *D = directors; *S = graduates not yet recruited as PE teachers, and *T = trainers specialized in sport technology) Table 3 shows the values of Khi-square of association to each category of lexemes identified in the interviewees' comments. The greater the Khi-square value, the stronger the association. Light-grey backgrounds emphasize the statistically significant associations.

The results showed that the interviewees invested themselves selectively in the topics of the interview (Table 3).

Considering Table 2, Table 3 indicates that the *A and *D subjects particularly developed comments on: (1) difficulties to ensure the internship in schools and necessity to reorganize this internship (Table 2 / C2); (2) the existence of few possibilities for the graduates to continue training and/or to benefit of a follow-up after graduation (Table 2 / C3); and (3) the acquisition of professional competencies as a key-goal unachieved by the training (Table 2 / C5).

Table 3 also indicates that the *S and *T subjects particularly emphasized: (1) a conception of PE as a sport initiation and, either a too late initialization of the courses in sport pedagogy in the curriculum, or a lack of prerequisites to take these courses (Table 2 / C1); and (2) the socioeconomic difficulties of the graduates not yet recruited as PE teachers (Table 2 / C4).

In addition, Table 3 indicates that the *A and *S subjects particularly defended the relevance of a multidisciplinary curriculum to train PE teachers. Moreover these interviewees considered that the multidisciplinary training in ISSEPs does not enough link courses in scientific domains and PE (Table 2 / C6).

Altogether this may denote a development of the interviewees' discourses depending on the centers of interest of each type of interviewees. This may also suggest the existence of different points of view

regarding the perceived difficulties or limitations in the training that are expressed in ECUs of each C. This led to consider the attributions of causes to such difficulties and limitations (Table 4).

Table 4. Causes imputed by interviewees to training difficulties

□	C1	C2	C3	C4	C5	C6
*A		Human resources BMD	PE field Training possibilities		Professional training in ISSEPs	T
*D		Human resources BMD	PE field Training possibilities		Professional training in ISSEPs	
*S	Curriculum design T			Job market		A
*T	S			Job market		

Table 4 shows the causes attributed by each type of interviewees (*A = academics; *D = directors; *S = graduates not yet recruited as PE teachers, and *T = trainers specialized in sport technology) to perceived difficulties in the training of PE teachers. These attributions are considered in each lexical category (C) determined by textual analysis (Alceste2012plus©) for each type of interviewees significantly associated to this category. Some causes of difficulties are attributed to ISSEP actors (A, S, T), the others, to a lack of human resources or of training possibilities, to the ISSEP capability to ensure the acquisition of professional competencies (Professional training in ISSEPs), to the BMD reform, to possibilities in the professional field (PE field), or to the job market.

Perceived difficulties and/or limitations in the training were attributed to different causes depending on the interviewees (Table 4), i.e.: to different ISSEP actors (A, S, or T), to ISSEP possibilities (human resources, training offer), to the BMD reform, to possibilities in the professional field, or to the job market.

Such causal attributions were found to vary from one type of interviewees to another. However, each type of interviewees only mentioned causes attributed to another type of interviewees or originated from the outside of the training, e.g.: the *S subjects attributed problems linked to the courses in sport pedagogy to the T subjects and to the curriculum design, while the *T subjects linked such problems to a series of prerequisites that the S subjects would not master (Table 4).

3 CONCLUSIONS

The present study aimed to examine possible effect of difficulties faced by the training of PE teachers in ISSEPs on the capability of the ISSEP actors to ensure an optimal training.

Textual analysis of the interviews with Alceste2012plus© led to content analysis that allowed to point-up elements of a conception of PE and of the training of PE teachers (Table 2). PE was conceived as sport initiation and the training as a multidisciplinary training aiming the acquisition of professional competencies to teach PE. Each of these elements was expressed by part of the interviewee types but was not put in question by the other interviewees (Tables 2 and 3).

On such base the interviewees showed awareness of difficulties objectively faced by the training (Tables 2 and 3). Both *A and *D subjects emphasized the reduction of the hourly volume of training since the initialization of the BMD reform, which has been also pointed-up in the literature [(10)]. These subjects also stressed the impossibility for the ISSEP graduates to be recruited as PE teacher directly after graduation and noted limits in the ISSEP possibility to extend training offer, as reported by the Tunisian

Court of Auditors ([13]). In accordance with the results of several inquiries (e.g.: [23], [24], [25]) the *S and *T subjects moreover deplored the existence, in Tunisia, of few job opportunities that would allow the ISSEP graduates to avoid socioeconomic difficulties before possibly becoming PE teachers. Such series of objective difficulties were logically imputed to elements external to the ISSEPs as consequences of the BMD reform, of evolutions in the PE field, or of the Tunisian economy (Table 4).

The *A and *D subjects also perceived difficulties, to ensure internship in schools and to achieve the learning of professional competencies (Tables 2 and 3), that they attributed to causes external to the ISSEPs (human resources provided to the ISSEPs) or, marginally, left unexplained (preparation to teach in real conditions).

The other difficulties were attributed to ISSEP actors (Table 4). The *S subjects imputed factors limiting the efficiency of the courses in sport pedagogy to the curriculum developers and/or to the T subjects. Conversely the *T subjects considered this efficiency as limited by prerequisites lacking in the S subjects (e.g.: attitude, language abilities). In addition, the *S subjects considered that the A subjects did not link the scientific courses to PE. Marginally *A subjects indicated that such links were limited by the relevance of T subjects' courses in sport technology. Each of these perceived difficulties were thus imputed by one type of ISSEP actors to another type of ISSEP actors.

In short, the interviewees considered that the training of the PE teachers faces a series of difficulties limiting its relevance and/or its efficiency. However, no interviewee explicitly considered to have a part of responsibility in the perceived training problems.

Such findings can be linked to psychological studies on perceived causes of success or failure (e.g.: [26]). According to Weiner ([27], [28], [29]) such causes can be related by an individual to factors considered as: (1) internal vs external to this individual; (2) controllable vs uncontrollable by this individual; and (3) stable vs unstable. For example, in this model both fatigue and produced effort are considered as internal and unstable factors, the fatigue level being considered as uncontrollable and the level of produced effort, as controllable. This suffices to suggest that the use of such model cannot be direct in the present study. However a parallel can be made as the results of the present study led to consider that each interviewee pointed-up training difficulties by imputing such difficulties to external causes (to this interviewee) not directly controllable (by this interviewee). In addition, in the present study, each perceived cause can be considered as potentially unstable but also: (1) as uncontrollable by the ISSEP actors (e.g.: the labour market in Tunisia), or (2) as external to the ISSEP actors perceiving it (e.g.: other type of ISSEP actors).

Consequently an adaptation of the training of PE teachers might be impossible as no ISSEP actor would feel to be a possible contributor, or to have to contribute, to this adaptation. This suggests that the interviewees might have been emotionally affected by the actual situation of the training and, consequently, tended to preserve self-esteem during the interviews ([30]). Such situation might also have elicited resistance to change (e.g.: [31], [32]) and, consequently, the feeling of having no reason to contribute to changing the present situation.

In the present study the comments of the interviewees can also be considered as symptomatic of a collective feeling of difficulty. These remarks might also be indicative of problems to identify and to overcome the causes of such feeling. This might be linked to stabilized representations of PE and/or of PE training (Table 2) that would be not questioned. On the one hand the Tunisian PE has to ensure sport initiation but also to contribute to the acquisition of methodological and social competencies identified in the Educational Act of 2008 ([12]). This might suggest possible adaptation of the training contents. On the other hand few precisions were given by the interviewees regarding both the links to be created among different courses and the professional competencies to be aimed. This might suggest other lines of reflection to adapt the training.

In conclusion the results of the present study suggest that difficulties objectively faced by the ISSEPs to train PE teachers have affected emotionally the ISSEP actors. Difficulties to adapt the training to the BMD reform may have hampered adaptation of the training contents to PE changes and/or in-depth reflection to both the multidisciplinary contents to be taught and the professional competencies to be aimed. The process of adaptation may also have challenged representations of PE and/or of the training of PE teachers, which may have aroused resist to change in ISSEP actors. Such conditions may have elicited a feeling of difficulty in these actors, possibly favoured by a series of contextual problems linked to the PE field and/or to the labour market. Therefore a downward spiral could have limited the adaptive dynamic of the ISSEP actors and the adaptation of the training of PE teachers in the ISSEPs.

Further research is required to determine possible generalization of the results of this study. Possible changes in the training of PE teachers in ISSEPs should also be examined once the ISSEP actors have absorbed the shock caused by the difficulties they have to face at present.

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