SIMILARITIES AND DIFFERENCES IN RISK AND PROTECTIVE FACTORS IN TEACHER INDUCTION FOR PROSPECTIVE ELEMENTARY AND PHYSICAL AND HEALTH EDUCATION TEACHERS

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ABSTRACT. The growing body of literature on teacher induction barriers has revealed the need to address issues that may lead to negative consequences. Recent research points to an increased interest in teacher resilience, a concept that promotes positive adaptation to counteract these adverse outcomes. However, teacher induction and resilience may differ depending on teaching context. For example, do specialists such as physical and health education teachers experience the same induction situation as generalist teachers? The authors aimed to compare the anticipated risk and protective factors related to the induction of these prospective teachers. The data from two studies were analyzed using thematic coding. The results indicate similarities and differences between the two groups that suggest ways to better support teacher induction.

SIMILARITÉS ET DIFFÉRENCES CONCERNANT LES FACTEURS DE RISQUE ET DE PROTECTION RELIÉS À L'INSERTION PROFESSIONNELLE DE FUTURS ENSEIGNANTS DU PRIMAIRE ET DE FUTURS ENSEIGNANTS D'ÉDUCATION PHYSIQUE ET À LA SANTÉ

RÉSUMÉ. Le nombre croissant de publications portant sur les défis inhérents à l'insertion professionnelle des enseignants a confirmé l'importance de se pencher sur des problématiques qui peuvent mener à diverses conséquences négatives. Parallèlement, la recherche récente a révélé un intérêt accru au sujet de la résilience des enseignants, un concept qui promeut l'adaptation positive pour contrer ce type d'adversité. Par ailleurs, l'insertion professionnelle et la résilience des enseignants peut différer en fonction du contexte d'enseignement. Par exemple, on peut se demander si des spécialistes, tels que les enseignants d'éducation physique et à la santé, vivent le même genre d'expérience d'insertion que des enseignants généralistes. Les auteurs ont ainsi tenté de comparer les facteurs de risque et de protection reliés à l'insertion professionnelle, anticipés par de futurs enseignants du primaire et d'éducation physique et à la santé. Pour ce faire, les données de deux études ont été analysées par un codage thématique, à partir d'une grille de codage commune. Les résultats indiquent que les deux groupes présentent des similarités et des différences qui permettent de mieux comprendre leur insertion professionnelle et d'orienter vers des pistes visant à les soutenir adéquatement dans cette étape cruciale de leur carrière.

A wealth of research on teachers' professional induction early in their career illustrates the precarious conditions they experience (Blankenship & Coleman, 2009).[1] The induction period is often considered a crucial and adverse moment in a teacher's career (Tait, 2008). Portelance, Mukamurera, Martineau and Gervais (2008) argued that induction is now more complex than before because precarious conditions amplify the inherent challenges. Houlfort and Sauvé (2010) added that this precariousness seems to be the primary factor affecting early career teachers' psychological health. Moreover, even though beginning teachers experience an intensive period of learning and adaptation (Feiman-Nemser, Schwille, Carver, & Yusko, 1999), they are expected to almost immediately assume the same responsibility as experienced teachers (Fantilli & McDougall, 2009; Le Maistre & Paré, 2010). As if this were not daunting enough, novice teachers are often burdened with the heaviest and most complex tasks (Conseil supérieur de l'éducation [CSE], 2004). These demanding tasks, shunned by everyone else (Gingras & Mukamurera, 2008), often consist of residual duties (Portelance et al., 2008) with less attractive schedules (Martineau & Vallerand, 2007) and fragmented, difficult-to-manage chores (Mukamurera, 2005) with challenging students (Fantilli & McDougall, 2009; Fletcher, Chang, & Kong, 2008; Martineau, Gervais, Portelance, & Mukamurera, 2008; Moir, 2009) in schools with the greatest needs (Moir, 2009). These conditions probably help to explain the "reality shock" beginning teachers experience, as many of them are confronted with a gap between expectations and reality (Le Maistre & Paré, 2010; Mukamurera, Bourque, & Gingras, 2008).

All these challenges have significant impacts on early career teachers' experience including high stress levels (Cossette, 1999), psychological distress (Mukamurera, Bourque, & Ntebuste, 2010), burnout (Fives, Hammam, & Olivarez, 2007), and even attrition. A number of international studies during the last decade indicated that the teacher attrition rate during the first years of induction fluctuates between 20% and 50% depending on the study or country (Martel, 2009; Parker & Martin, 2009; Rushton, Morgan, & Richard, 2007; Sharplin, O'Neill, & Chapman, 2011; Tamir, 2010). Other researchers also suggested that many teachers consider leaving the profession during their first five years of teaching — even if they do not end up doing so (Fantilli & McDougall, 2009; Mukamurera et al., 2008). The main causes of teacher attrition include heavy workload, lack of support and resources, a sense of inadequacy, and challenging behaviours and special needs on the part of students (Jeffrey & Sun, 2008; Mansfield, Beltman, Price, & McConney, 2012; Tait, 2008).

Given that retention in the early stages of the profession appears to be a major concern in many countries (Beltman, Mansfield, & Price, 2011; Le Cornu, 2009; Mansfield et al., 2012), some researchers argued that studying teacher resilience may be a way to promote "quality retention" (Gu & Day, 2007, p. 1314). According to Mukamurera et al. (2010), it also offers the opportunity

to address positive adaptation for early career teachers, a promising avenue to counteract the adverse consequences of a challenging induction.

Though many studies have attempted to identify the barriers to teacher induction and their consequences, few have examined the transition from teacher education to induction. However, following Woolfolk Hoy and Burke Spero's (2005) results, it would be interesting to better understand why the increase in efficacy by the end of student teaching decreases during the first year of teaching. Moreover, very few researches have studied the situation of physical and health education teachers (PHETs) in particular (Blankenship & Coleman, 2009). Spallanzani, Desbiens and Beaudoin (2012) found significant differences in their teacher induction experience. Our previous work also highlighted some particular features of their teaching contexts during the first few years: teaching tasks spread across several schools, poor sports equipment and facilities, and the reduced importance of discipline (Grenier, Beaudoin, Leroux, Rivard, & Turcotte, 2014). However, there is very little scientific writing to date on PHET induction.

Even if we acknowledge that the teaching context impacts the teacher induction experience and the resilience of new teachers, we continue to question the similarities and differences between PHETs and generalist teachers, such as elementary school teachers (ETs), whose induction context has been studied more extensively. This paper aims to compare the results of two independent studies conducted with prospective teachers. Both studies had the same objective: to question prospective ETs (first study) and PHETs (second study) about their imminent induction into the profession with a view to identifying each group's anticipated risk and protective factors. As both studies had the same objective, it appeared appropriate and useful to analyze the data using the same conceptual framework (and analysis grid). In this way, we can compare their results and highlight some of the similarities and particularities of both teaching contexts, thereby gaining, hopefully, a thorough understanding of teacher induction and some better ways to support it.

CONCEPTUAL FRAMEWORK

Teacher induction

Teacher induction is an ambiguous and polysemous concept. Nevertheless, many authors often view integration into the teaching profession as a transitional and dynamic process that generally covers the first five years of practice (Jeffrey & Sun, 2008; Martineau, 2006). Mukamurera, Martineau, Bouthiette and Ndoreraho (2013) consider it a multidimensional process involving five aspects: 1) employment situation, consisting of the administrative aspects of induction (status, employment access, etc.); 2) working conditions, referring to the task nature, workload, etc.; 3) organizational aspects, including integration

into the workplace and the teaching community (institutional culture, relations with others, etc.); 4) professionalism, which relates to teachers' professional roles, skills, knowledge, and competencies; and 5) personal and psychological aspects, which refer to the way beginners experience their induction. This framework is used to identify the main aspects and components highlighted by prospective teachers in this paper.

Teacher resilience

Teacher resilience has been a growing field of research over the last decade (Le Cornu, 2009; Mansfield et al., 2012). Even if resilience still has no fixed definition, many authors mentioned at least two indispensable conditions as part of their definition: 1) the presence of significant adversity, and 2) positive adaptation (Luthar, Cicchetti, & Becker, 2000). Although several types of resilience have been studied (Werner, 2000), this paper focuses on structural resilience in particular (Anaut, 2003), which stems from the daily challenges associated with the teacher induction period. The majority of studies on resilience conceptualize it as a developmental process (McCubbin, 2001) resulting from the interaction of environmental and personal risk or protective factors (Théorêt, 2005). Accordingly, resilience is a multidimensional and complex construct (Mansfield et al., 2012). Richardson (2002) also presented it as a dynamic and evolving process.

The four-dimensional teacher resilience framework developed by Mansfield et al. (2012) allowed for the consideration of another perspective. Because it was framed based on prospective and beginning teachers' view of a resilient teacher (personal factors), we were able to draw parallels between our results and this model. More specifically, the four dimensions are: 1) professional aspects (flexible and adaptable, reflective, effective teaching skills, organization, preparedness, time management, commitment to students); 2) emotional aspects (bounces back, copes with job demands / stress, cares for own well-being, enjoys teaching, manages emotions, has a sense of humour, doesn't take things personally); 3) social aspects (solves problems, seeks help and takes advice, builds support and relationships, has strong interpersonal and communication skills); and 4) motivational aspects (is positive and optimistic, is persistent, focuses on learning and improving, has confidence and self-belief, enjoys challenges, maintains motivation and enthusiasm, sets realistic expectations and goals).

Also, in keeping with Leroux (2010, 2013)[2] and the literature on teacher induction, we identified different categories of risk and protective factors for novice teachers. First, individual risk factors may include personal difficulties (e.g., poor sense of humour, unrealistic expectations, low self-confidence) or poor skills and competencies (e.g., poor work-life balance, poor problem-solving skills, lack of experience, difficulty managing a classroom). Second, environmental risk factors may be attributed to the school and administration (e.g., lack of support, heavy workload, conflicting relationships, etc.) or to family and friends

(e.g., lack of support, conflicting relationships, instability, disease, etc.). Third, individual protective factors may be viewed as personal strengths and qualities (e.g., sociability, altruism, optimism, motivation) or skills and competencies (e.g., good problem-solving skills, high level of professional competencies, good work-life balance, etc.). Finally, environmental protective factors may be related either to the school and administration (e.g., good relationships, help and support, realistic expectations, etc.) or to family and friends (e.g., support and encouragement, peacefulness, and good relationships, etc.).

METHODS

This article relies on two studies conducted respectively with prospective ETs and PHETs. Both studies took place during the last year of their teacher education program and therefore teacher induction was anticipated for all the participants. We might also mention that in both studies, we followed participants during their first years of teaching, but we here focus only on their initial training phase.

First study

The sample for the first study consisted of 15 finishing elementary student teachers (14 women and one man) studying at Université du Québec en Outaouais, five of whom graduated in 2011, and 10 in 2012. 13 participants were aged between 22 and 25, and two were respectively 34 and 36 years old. All participants were volunteers.

The instrument used was a 20-minute qualitative questionnaire. Specifically, the participants had to complete paperwork on teacher induction as part of the coursework[2] that took place during their last internship in December 2010 or 2011. They were asked to anticipate the risk (obstacles) and protective factors (resources) they expected to experience during their upcoming induction into the profession. However, it should also be noted that, unlike the prospective PHETs, these students had been introduced to the concept of personal and environmental risk and protective factors during this coursework.

Second study

In spring 2011, at the end of their teacher education program in PHE, 15 graduating students (seven women and eight men) agreed to participate in the study. 13 participants were aged between 23 and 26, and two were 32 and 34 years old respectively. They had been recruited the last day of their last course upon returning from their internships. The students were registered at three different universities: Université de Sherbrooke, Université du Québec à Montréal, and Université du Québec à Trois-Rivières, and were destined to be elementary (n = 7) or secondary (n = 8) school teachers. Even if they came from different universities and were meant to teach in different contexts (el-

ementary and secondary), they had a similar initial training and were going to teach as specialists, so we kept all of them in the sample, allowing us to have a similar sample as in the first study.

The instrument used consisted of individual semi-structured interviews lasting between 30 to 45 minutes each. This method was used because it allowed us to record the perceptions of these new graduates before they began their teaching careers in May 2011. Telephone interviews were conducted for easy access for students living in different regions of Quebec. The interview guide was developed drawing on themes from Martineau and Presseau's (2003) qualitative questionnaire, which includes six sections containing 15 questions in all. This paper presents the answers to only two of these questions: the first asks the participants to share the different factors they felt might facilitate their induction, and the second asks them to share the factors they viewed as potential obstacles to their induction. The interviews were conducted by research assistants and supervised by the main investigator.

Data analysis

For both studies, the data gathered were analyzed using thematic coding, with the same coding grid representing the risk and protective factors for beginning teachers (Leroux, 2010, 2013). More specifically, we used four main categories of factors as previously defined in the conceptual framework section: individual risk factors, environmental risk factors, individual protective factors, and environmental protective factors.

For the first study, each answer of the paperwork (anticipated risk and protective factors) was analyzed using the coding grid. Each time a code was used, it was calculated as one frequency. Two research assistants independently coded approximately 15% of the corpus and the mean inter-coders agreements were 95%. The same research assistant recoded another 15% of the corpus over time and the mean intracoder agreements were 98%. In total, 212 answers were analyzed, 89 related to risk factors and 123 to protective factors.

For the second study, a full transcript of the entire interview has allowed for a thorough analysis using the same coding grid as in the first study. Each participant response was divided into meaning units corresponding to each new idea presented regarding the question formulated, with a single meaning unit calculated as one frequency. Thereafter, meaning units were coded using the analysis grid. Two members of the research team contributed to the analysis and the validation process. A first member coded all the meaning units, and 20% of these were independently coded by a second member, leading to an 85% degree of agreement, as recommended by Yardley (2008). In total, 233 meaning units were analyzed, 95 related to risk factors and 138 to protective factors.

MAIN RESULTS

Main risk factors identified by both groups

As presented by Théorêt, Hrimech, Garon, & Carpentier (2003), a risk factor is a condition or event that may increase an individual's likelihood of encountering obstacles during his or her development.

Table 1 shows the distribution of the risk factors identified by both prospective ETs participating in the first study and prospective PHETs participating in the second study.

TABLE 1. *Distribution of the main risk factors identified by prospective teachers*

Main Risk Factors	Frequency of this Factor / Risk Factors Total (%)		Total Frequency
	ETs	PHETs	
PERSONAL Risk Factors	Total = 52 (58.4%)	Total = 28 (29.5%)	80
Lack of experience	10 (19.2%)	1 (3.6%)	11 (13.8%)
Unrealistic expectations	9 (17.3%)	1 (3.6%)	10 (12.5%)
Lack of involvement, not socializing with others, isolating themselves	1(1.9%)	8 (28.6%)	9 (11.2%)
Stress, burnout, fragile psychological health	8 (15.4%)	0 (0.0%)	8 (10.0%)
Low self-efficacy, low self-confidence	4 (7.7%)	3 (10.7%)	7 (8.8%)
Inappropriate work-life balance	6 (11.5%)	0 (0.0%)	6 (7.5%)
Feeling of isolation, weak sense of belonging	3 (5.8%)	2 (7.1%)	5 (6.3%)
Negative feelings (e.g., sadness, anger)	3 (5.8%)	1 (3.6%)	4 (5.0%)
Lack of competencies	1 (1.9%)	3 (10.7%)	4 (5.0%)
Low sense of accomplishment	3 (5.8%)	0 (0.0%)	3 (3.8%)
Lack of flexibility	2 (3.8%)	1 (3.6%)	3 (3.8%)
Lack of organizational culture knowledge	0 (0.0%)	3 (10.7%)	3 (3.8%)
Other personal factors (e.g., lack of ideas, frequently arriving late)	2 (3.8%)	0 (0.0%)	2 (2.5%)
Feeling out of place; fear of being judged	0 (0.0%)	2 (7.1%)	2 (2.5%)
Lack of motivation	0 (0.0%)	1 (3.6%)	1 (1.3%)
Personal factors specific to PHE (e.g., difficulty interacting with teachers in other fields)	0 (0.0%)	1 (3.6%)	1 (1.3%)
Other professional factors (e.g., refusing contracts)	0 (0.0%)	1 (3.6%)	1 (1.3%)

(continued)

TABLE 1. *Distribution of the main risk factors identified by prospective teachers (continued)*

Main Risk Factors	Frequency of this Factor / Risk Factors Total (%)		Total Frequency
	ET	PHET	
ENVIRONMENTAL Risk Factors	Total = 37 (41.6%)	Total = 67 (70.5%)	104
Lack of cooperation or difficulties with colleagues	3 (8.1%)	15 (22.4%)	18 (17.3%)
Lack of school help and support	8 (21.6%)	6 (9.0%)	14 (13.5%)
Poor hiring practices, job insecurity	0 (0.0%)	9 (13.4%)	9 (8.7%)
Other nonspecific stressful school conditions	7 (18.9%)	1 (1.5%)	8 (7.7%)
Conflicts or problematic relationships with school team, negative work environment	2 (5.4%)	6 (9.0%)	8 (7.7%)
Difficult relationships with pupils	2 (5.4%)	5 (7.5%)	7 (6.7%)
Factors specific to PHE (e.g., only one PHE teacher in the school, problems managing time, space and equipment)	0 (0.0%)	7 (10.4%)	7 (6.7%)
School's unrealistic expectations	2 (5.4%)	3 (4.5%)	5 (4.8%)
Heavy workload, lack of time, inappropriate task / assignment	3 (8.1%)	1 (1.5%)	4 (3.8%)
Lack of administrative support	1 (2.7%)	2 (3.0%)	3 (2.9%)
Unclear school rules and policies	3 (8.1%)	0 (0.0%)	3 (2.9%)
Difficult relationships with pupils' parents or problems related to family	3 (8.1%)	0 (0.0%)	3 (2.9%)
Poor welcome; deficient integration	0 (0.0%)	3 (4.5%)	3 (2.9%)
Confused personal boundaries on the part of the entourage	2 (5.4%)	0 (0.0%)	2 (1.9%)
Undervalued profession	0 (0.0%)	2 (3.0%)	2 (1.9%)
School's unclear organizational culture and standards	0 (0.0%)	2 (3.0%)	2 (1.9%)
Lack of material resources	0 (0.0%)	2 (3.0%)	2 (1.9%)
Rigidity, lack of openness	0 (0.0%)	2 (3.0%)	2 (1.9%)
Unstable family structures (e.g., separation, divorce)	1 (2.7%)	0 (0.0%)	1 (1.0%)
Few opportunities to participate in decisions or projects	0 (0.0%)	1 (1.5%)	1 (1.0%)
TOTAL RISK FACTORS	89 (100.0%)	95 (100.0%)	184

The first findings show that prospective ETs referred mostly to personal (58.4%) rather than environmental (41.6%) risk factors, while prospective PHETs mentioned more environmental risk factors (70.5%) than personal factors (29.5%). The frequency of certain personal risk factors liable to jeopardize professional induction is similar for both groups: low self-efficacy, low self-confidence; feeling of isolation, weak sense of belonging; negative feelings (e.g., sadness, anger); lack of competencies; and lack of flexibility. We also observe

that a few common personal risk factors predominate for prospective ETs (lack of experience; unrealistic expectations) or PHETs (lack of involvement, not socializing with others, isolating themselves). Accordingly, some factors were mentioned by prospective ETs only (stress, burnout, fragile psychological health; inappropriate work-life balance; low sense of accomplishment; other personal factors), or PHETs only (lack of organizational culture knowledge; feeling out of place; fear of being judged; lack of motivation; personal factors specific to PHE; other professional factors).

Concerning the environmental risk factors related to their upcoming professional induction, both groups mentioned lack of school help and support, school's unrealistic expectations, heavy workload, lack of time, inappropriate task / assignment, and lack of administrative support. Here again, Table 1 identifies a few common factors that tend to predominate for prospective ETs (other nonspecific stressful school conditions) or PHETs (lack of cooperation or difficulties with colleagues; conflicts or problematic relationships with school team, negative work environment; difficult relationships with pupils). Finally, a number of environmental risk factors appear only for prospective ETs (unclear school rules and policies; difficult relationships with pupils' parents or problems related to family; confused personal boundaries on the part of the entourage; unstable family structures [e.g., separation, divorce]) or PHETs only (poor hiring practices, job insecurity; factors specific to PHE; poor welcome, deficient integration; undervalued profession; school's unclear organizational culture and standards; lack of material resources; rigidity, lack of openness; few opportunities to participate in decisions or projects).

Main protective factors identified by both groups

The above-mentioned protective factors correspond to personal strengths or skills, or to an external condition that enhances teacher development (Théorêt et al., 2003).

Table 2 presents the distribution of the protective factors identified for both prospective ETs and PHETs. As shown in the table, both groups mainly refer to personal (ETs: 56.9% vs. PHETs: 50.7%) rather than environmental protective factors (ETs: 43.1% vs. PHETs: 49.3%). Both cited a few personal protective factors likely to facilitate induction: flexibility, openmindedness; interest in continuing education; sense of accomplishment; and experience in teaching. Certain factors were reported most often by prospective ETs (motivation, optimism; sense of belonging) or PHETs (sociability, altruism, involvement; other personal protective factors). Finally, a number of personal protective factors were identified by prospective ETs only (self-efficacy, self-confidence; sense of humour; motivation and capacity to learn; realistic expectations; good life skills; internal locus of control, independence, autonomy; good work-life balance) and certain others by PHETs only (networking; good knowledge of organizational culture; well-developed competencies; other professional protec-

tive factors; sense of security, stability; good organizational skills in classroom or gymnasiums; good initial training, adequate preparation; feeling of being in the right place; feeling of value, utility and recognition).

TABLE 2. *Distribution of the main protective factors identified by prospective teachers*

Main Protective Factors	Frequency of this Factor / Total Protective Factors (%)		Total Frequency
	ETs	PHETs	
PERSONAL Protective Factors	Total = 70 (56.9%)	Total = 70 (50.7%)	140
Sociability, altruism, involvement	9 (12.9%)	21 (30.0%)	30 (21.4%)
Motivation, optimism	11 (15.7%)	3 (4.3%)	14 (10.0%)
Networking	0 (0.0%)	11 (15.7%)	11 (7.9%)
Self-efficacy, self-confidence	9 (12.9%)	0 (0.0%)	9 (6.4%)
Sense of humour	8 (11.4%)	0 (0.0%)	8 (5.7%)
Motivation and capacity to learn	8 (11.4%)	0 (0.0%)	8 (5.7%)
Good knowledge of organizational culture	0 (0.0%)	8 (11.4%)	8 (5.7%)
Other personal protective factors (e.g., creativity, initiative, punctuality)	1 (1.4%)	6 (8.6%)	7 (5.0%)
Flexibility, openmindedness	4 (5.7%)	2 (2.9%)	6 (4.3%)
Sense of belonging	4 (5.7%)	1 (1.4%)	5 (3.6%)
Realistic expectations	4 (5.7%)	0 (0.0%)	4 (2.9%)
Well-developed competencies	0 (0.0%)	4 (5.7%)	4 (2.9%)
Interest in continuing education	2 (2.9%)	1 (1.4%)	3 (2.1%)
Sense of accomplishment	2 (2.9%)	1 (1.4%)	3 (2.1%)
Good life skills (e.g., problem solving skills)	3 (4.3%)	0 (0.0%)	3 (2.1%)
Other professional protective factors (e.g., accepting contracts)	0 (0.0%)	3 (4.3%)	3 (2.1%)
Experience in teaching	1 (1.4%)	1 (1.4%)	2 (1.4%)
Internal locus of control, independence, autonomy	2 (2.9%)	0 (0.0%)	2 (1.4%)
Good work-life balance	2 (2.9%)	0 (0.0%)	2 (1.4%)
Sense of security, stability	0 (0.0%)	2 (2.9%)	2 (1.4%)
Good organizational skills in classroom or gymnasium	0 (0.0%)	2 (2.9%)	2 (1.4%)
Good initial training, adequate preparation	0 (0.0%)	2 (2.9%)	2 (1.4%)
Feeling of being in the right place	0 (0.0%)	1 (1.4%)	1 (0.7%)
Feeling of value, utility and recognition	0 (0.0%)	1 (1.4%)	1 (0.7%)

(continued)

TABLE 2. *Distribution of the main protective factors identified by prospective teachers (continued)*

Main Protective Factors	Frequency of this Factor / Total Protective Factors (%)		Total Frequency
	ETs	PHETs	
ENVIRONMENTAL Protective Factors	Total = 53 (43.1%)	Total = 68 (49.3%)	121
Colleagues' support, good collaboration	3 (5.7%)	24 (35.3%)	27 (22.3%)
Good relationships with school team, good work environment	9 (17.0%)	3 (4.4%)	12 (9.9%)
Positive factors specific to PHE (e.g., at least two PHE teachers in the school, positive perception of health component / contribution in the PHE field)	0 (0.0%)	10 (14.7%)	10 (8.3%)
Fair hiring practices	0 (0.0%)	9 (13.2%)	9 (7.4%)
Family and friends' support and encouragement	7 (13.2%)	1 (1.5%)	8 (6.6%)
Flexibility and openness in the work place	5 (9.4%)	2 (2.9%)	7 (5.8%)
Meaningful participation in the decision-making process and in school projects	2 (3.8%)	5 (7.4%)	7 (5.8%)
Great family values and life skills	6 (11.3%)	0 (0.0%)	6 (5.0%)
Good school help and support	3 (5.7%)	1 (1.5%)	4 (3.3%)
Clear school rules and policies	4 (7.5%)	0 (0.0%)	4 (3.3%)
Warm welcome, good integration	0 (0.0%)	4 (5.9%)	4 (3.3%)
Good administrative support	1 (1.9%)	2 (2.9%)	3 (2.5%)
Fair division of family responsibilities	3 (5.7%)	0 (0.0%)	3 (2.5%)
Stable family structures (e.g., marriage)	3 (5.7%)	0 (0.0%)	3 (2.5%)
Good relationships with pupils	1 (1.9%)	1 (1.5%)	2 (1.7%)
Realistic expectations	2 (3.8%)	0 (0.0%)	2 (1.7%)
School's clear organizational culture and standards	0 (0.0%)	2 (2.9%)	2 (1.7%)
Good relationships with pupils' parents or problems related to family	1 (1.9%)	0 (0.0%)	1 (0.8%)
Teaching life skills	1 (1.9%)	0 (0.0%)	1 (0.8%)
Good personal boundaries on the part of the entourage	1 (1.9%)	0 (0.0%)	1 (0.8%)
Warm relationships in personal surroundings, good social life	1 (1.9%)	0 (0.0%)	1 (0.8%)
Other positive school conditions	0 (0.0%)	1 (1.5%)	1 (0.8%)
Teachers' work and profession valued	0 (0.0%)	1 (1.5%)	1 (0.8%)
Available support system for professional induction	0 (0.0%)	1 (1.5%)	1 (0.8%)
Access to material resources	0 (0.0%)	1 (1.5%)	1 (0.8%)
TOTAL PROTECTIVE FACTORS	123 (100.0%)	138 (100.0%)	261

Regarding the environmental protective factors that may positively contribute to their professional induction, both groups highlighted some factors with similar frequency: good school help and support, good administrative support, and good relationships with pupils. Here again, a few factors prevail for prospective ETs (good relationships with school team, good work environment; family and friends' support and encouragement; flexibility and openness in the work place) or PHETs (colleagues' support, good collaboration; meaningful participation in the decision-making process and in school projects). Finally, certain environmental protective factors were specifically associated with prospective ETs (great family values and life skills; clear school rules and policies; fair division of family responsibilities; stable family structures; realistic expectations; good relationships with pupils' parents or problems related to family; teaching life skills; clear limits in the personal surroundings; warm relationships in personal surroundings, good social life) and certain others with PHETs (positive factors specific to PHE; fair hiring practices; warm welcome, good integration; school's clear organizational culture and standards; other positive school conditions; teachers' work and profession valued; available support system for professional induction; and accessibility of material resources).

DISCUSSION

We focused primarily on the common factors and the distinctions regarding the two groups of prospective teachers while emphasizing links with the relevant scientific literature. In addition, we attempted to correlate these results to the frameworks of Mukamurera et al. (2013) and Mansfield et al. (2012) in order to broaden our perspective. We also highlighted some of the limits of this paper so as to define its scope.

Common factors for both groups

The study of these two groups of prospective teachers allowed us to identify common risk and protective factors liable to impact the professional induction of teachers. Both groups identified eight personal risk factors. The three most frequently mentioned are perceived lack of experience, unrealistic expectations, and lack of involvement, not socializing with others, isolating themselves. Prospective ETs, however, appeared to be more concerned with their experience (19.2%) and unrealistic expectations (17.3%) compared with the prospective PHETs interviewed, who rated these two factors at a frequency of 3.6% each. The latter appeared to be more concerned with lack of involvement, not socializing with others, isolating themselves, at a frequency of 28.6% compared with 1.9% for the ETs. Within the context of PHE, involvement in school projects and interaction with all members of the school community are highly valued by PHETs, and are even expected by other teachers and the school administration. Thus, such results are not surprising and have been observed in other studies (e.g., Richards & Templin, 2011; Sáenz-López, Almagro, & Ibáñez, 2011; Shoval,

Erlich, & Fejgin, 2010; Spallanzani et al., 2012). All these factors were identified by Leroux (2010) as well. Unrealistic expectations may be related to the gap many researchers identify between beginning teachers' ideals and the reality of teaching during the induction period with limited resources, lack of time, heavy workload, etc. (Hand, 2007; Hill & Brodin, 2004; Huisman, Singer, & Catapano, 2010; Peters & Pearce, 2012; Tait, 2008). Lack of involvement or self-imposed isolation (Leroux & Théorêt, 2014a) could be seen as a fear of seeking help, only to be perceived as incompetent or unprepared for the job (Shoval, Erlich, & Fejgin, 2010; Tait, 2008). Five other factors were cited less often, but their frequency was similar for both groups, and all are highlighted in the scientific literature: low self-efficacy, low self-confidence (Beltman et al., 2011; Hong, 2012; Leroux & Théorêt, 2014b; Leroux, 2010; Tait, 2008); feeling of isolation, weak sense of belonging (Castro, Kelly, & Shih, 2010); negative feelings (Hong, 2010; Leroux & Théorêt, 2014b; Leroux, 2010; Sharplin et al., 2011); lack of competencies (Leroux, 2010; Leroux & Théorêt, 2014b); and lack of flexibility (Leroux, 2010).

As regards environmental risk factors, both groups again identified eight factors, six of them in similar proportions: lack of school help and support, school's unrealistic expectations, heavy workload, lack of time, inappropriate task / assignment, lack of administrative support, conflicts or problematic relationships with school team, negative work environment and difficult relationships with pupils. One also observes that the PHET group seemed more concerned with lack of cooperation or difficulties with colleagues, rated at 22.4% compared with 8.1% for the ET group. Perhaps specialists feel this factor is particularly important because the inherent nature of their work requires them to collaborate with the school as a whole. The ET group, on the other hand, was more often concerned with nonspecific stressful school conditions at a rate of 18.9% compared with 1.5% for the PHET. Lack of school help and support is underscored in the literature (Leroux, 2010; Tait, 2008), as are lack of administrative support (Beltman et al., 2011; Hong, 2010; Huisman et al., 2010), and difficulties with colleagues (Beltman et al., 2011; Castro et al., 2010; Leroux, 2010). This is also the case for heavy workload, lack of time, inappropriate task / assignment, which may be related to entry into the profession (Beltman et al., 2011; Hong, 2012), although workload and lack of time are also mentioned at other stages of the teaching career (Leroux & Théorêt, 2014b; Leroux, 2010). Finally, Beltman et al. (2011), Leroux (2010) and Tait (2008) also stressed the difficulties with pupils having special needs.

With regard to personal protective factors, both groups again identified eight factors. Five factors mentioned in a similar proportion also appear in the relevant scientific literature: flexibility, openmindedness (Leroux, 2010; Leroux & Théorêt, 2014a); interest in continuing education (Beltman et al., 2011; Huisman et al., 2010; Leroux, 2010); sense of accomplishment (Beltman et al., 2011; Leroux & Théorêt, 2014a); experience in teaching (Leroux, 2010); and

sense of belonging (Leroux, 2010). However, prospective PHETs appeared to see sociability, altruism, and involvement, and other personal protective factors as being more important since they rated them respectively at 30.0% and 8.6% compared with the ET group at 12.9% and 1.4%. The factor, motivation and optimism, seemed more important for the ET group, since it was rated at 15.7% compared with 4.3% for the PHET group. Those personal protective factors are also identified in Leroux's (2010) study.

As for the environmental protective factors, finally, both groups of prospective teachers emphasized the importance of eight factors, five in similar proportions and all supported by the relevant literature: good school help and support (Huisman et al., 2010; Leroux & Théorêt, 2014a and b; Leroux, 2010); good administrative support (Beltman et al., 2011; Hong, 2012; Peters et Pearce, 2012); good relationships with pupils (Beltman et al., 2011; Leroux & Théorêt, 2014b; Leroux, 2010); meaningful participation in the decision-making process and in school projects (Leroux, 2010; Tait, 2008); and flexibility and openness in the workplace (Leroux, 2010). Three other factors were identified by both groups but were of prominent importance for prospective PHETs (colleagues' support and good collaboration — 35.3% vs. 5.7% for prospective ETs) or prospective ETs (good relationships with school team and good work environment — 17.0% vs. 4.4% for prospective PHETs; family and friends' support and encouragement — 13.2% vs. 1.5% for PHETs). As we indicated previously, the inherent nature of PHET work requires these teachers to collaborate with their colleagues. Prospective ETs also value the importance of a good relationship with the school team, but unlike specialists, they have the possibility of working on an independent basis. It is also interesting to see the factor, family and friends' support, emerging for prospective ETs; this may be related to work-life balance, which will be discussed later on. And once more, those three factors are all highlighted in the literature: colleagues' support (Beltman et al., 2011; Leroux & Théorêt, 2014b; Sharplin et al., 2011); good relationships and work environment (Leroux & Théorêt, 2014a; Leroux, 2010; Tait, 2008); and family and friends' support (Beltman et al., 2011; Leroux & Théorêt, 2014a, 2014b; Leroux, 2010).

When these results are analyzed within our conceptual frameworks, we see that the personal points (either risk or protective factors) common to prospective ETs and PHET are mainly related to the fifth dimension (personal and psychological) outlined by Mukamurera et al. (2013) and the motivational and emotional aspects of Mansfield et al. (2012) (e.g., unrealistic expectations; low self-efficacy, low self-confidence; negative feelings; sense of belonging; motivation and optimism; etc.). However, some personal factors may also be common to Mukamurera et al.'s (2013) fourth dimension (professionalism) and Mansfield et al.'s (2012) professional aspects, for example, lack of experience, lack of competencies, or interest in continuing education. On the environmental side, many risk or protective factors may be related to Mukamurera et al.'s (2013)

third dimension (organizational aspects of teacher induction), as it is the case for lack of school help and support; conflicts or problematic relationships with school team, negative work environment; difficult relationships with pupils; good administrative support; or colleagues' support and good collaboration. One also notes, however, that some environmental factors seem connected to Mukamurera et al.'s (2013) second dimension (task / working conditions), for example: heavy workload, lack of time, inappropriate task / assignment; meaningful participation in the decision-making process and in school projects; and flexibility and openness in the workplace.

Distinctions between the two groups

Although interesting commonalities can be identified between prospective ETs and PHETs, many other researchers highlight the specific contexts and needs of these two groups. Here we focus on the most frequent factors (frequency ≥ 5) as well as on factors that seem particularly relevant to either one teaching context or another. But before exploring specific features of each group, as noted earlier, prospective ETs referred, for the most part, to personal (58.4%) rather than environmental (41.6%) risk factors, whereas prospective PHETs mentioned more environmental risk factors (70.5%) than personal factors (29.5%). This distinction may possibly be explained by the nature of the research instruments used in both cases. Prospective ETs were asked to complete an assignment where they had to list anticipated personal and environmental risk and protective factors that would impact their professional induction, which may explain the equivalent proportions (around 50.0%) of these four categories of factors. It is worth recalling that these students were also introduced to the concept of personal and environmental risk and protective factors in their coursework. In contrast, prospective PHETs were asked to anticipate factors that could facilitate (protective) or impair (risk) their induction in a semi-structured interview, meaning they had the latitude to focus on either personal or environmental factors.

Prospective ETs. Concerning personal risk factors, prospective ETs specifically underscored two important factors that are also present in the scientific literature: "stress, burnout, fragile psychological health" (15%, Hong, 2010; Leroux, 2010; Leroux & Théorêt, 2014a, 2014b; Sharplin et al., 2011) and "inappropriate work-life balance" (12%, Hong, 2012; Leroux, 2010; Leroux & Théorêt, 2014a, 2014b). We would assume these two factors are interconnected; however it remains unclear why they are completely ignored by prospective PHETs. We hypothesize that the latter may be better informed about the importance of these life skills and the way to integrate healthy lifestyle habits into their everyday lives given this is part of their field of expertise. It certainly highlights the need to consider such factors and integrate the development of life skills such as stress management, self-efficacy, and healthy lifestyle into the initial training of ETs. Perhaps this difference can also be partly explained by the sample constitu-

tion (PHETs: 7 women and 8 men vs. ETs: 14 women and 1 man) since some studies show that women report more stress than men (Naylor & Schaefer, 2002; Royer, Loiselle, Dussault, Cossette, & Deaudelin, 2001). In reference to environmental risk factors, prospective ETs particularly stressed difficult relationships with pupils' parents or problems related to family (Beltman et al., 2011; Castro et al, 2010; Leroux, 2010; Leroux & Théorêt, 2014a, 2014b; Peters & Pearce, 2012); this is understandable because, unlike the prospective PHETs, their work brings them into greater contact with pupils' families. This factor again stresses the need to address the issue of how to collaborate with pupils' parents / family in elementary teacher education programs.

On the protective side, prospective ETs specifically referred to self-efficacy, self-confidence (Beltman et al., 2011; Leroux, 2010; Leroux & Théorêt, 2014a), sense of humour (Leroux, 2010; Leroux & Théorêt, 2014a; Sharplin et al., 2011), and motivation and capacity to learn (Beltman et al., 2011; Huisman et al., 2010; Leroux, 2010; Leroux & Théorêt, 2014a) as personal factors likely to contribute to a successful induction. From the perspective of environmental protective factors, the prospective ETs specifically mentioned a number of factors related to their family or personal surroundings, which might be explained by their emphasis on inappropriate work-life balance. The relevant literature mentions these factors as being related to family support (Beltman et al., 2011; Huisman et al., 2010; Leroux, 2010; Leroux & Théorêt, 2014a): great family values and life skills, fair division of family responsibilities, stable family structures; etc. It is quite interesting to note the presence of these family-related factors, as they were ignored by the prospective PHETs. We question whether the over-abundance of women in the first sample could partially explain this situation, as women may be more likely to share their difficulties with people in their immediate circle. Could the sport culture also explain, in some ways, the absence of these factors for prospective PHETs?

Considering these specific factors for prospective ETs, we can easily relate most personal factors (stress, burnout, fragile psychological health; inappropriate work-life balance; self-efficacy, self-confidence; sense of humour) to Mukamurera et al.'s (2013) fifth aspect of teacher induction (personal and psychological aspects), and Mansfield et al.'s (2012) motivational and emotional aspects. Motivation and capacity to learn, which is also a part of the motivational aspect (Mansfield et al., 2012), could be associated instead with Mukamurera et al.'s (2013) fourth dimension (professionalism). For the environmental factors pointed out here, difficult relationships with pupils' parents could be connected to organizational aspects (the third dimension in Mukamurera et al., 2013), but we feel the other family-related factors (great family values and life skills, fair division of family responsibilities and stable family structures) should be classified instead in the fifth dimension (personal and psychological aspects).

Prospective PHETs. As discussed by Spallanzani et al. (2012), many differences can be identified for prospective PHETs in school environments. Concerning personal risk factors exclusively identified by these PHETs, one in particular drew our attention (feeling out of place, fear of being judged, Tait, 2008), as this factor is probably related to another environmental risk factor identified for PHETs only (undervalued profession). Those two factors certainly reveal that many PHETs are disappointed to observe other teachers' negative view of physical education (Blankenship & Coleman, 2009; Cruz & Li, 2009; Grenier et al., 2014; Shoval, Erlich, & Fejgin, 2010). Such results lead us to ask how we can better train prospective PHETs to envision their role in the school context and how to develop and integrate health education components within their PHE program and in the school (Grenier, Beaudoin, Rivard, & Turcotte, 2012; Grenier, Rivard, Beaudoin, Turcotte, & Leroux, 2013) in order to enhance the value of their profession. Two other environmental risk factors caught our attention: poor hiring practices, job insecurity (Beltman et al., 2011; Hong, 2012) and other factors specific to PHE. Surprisingly, prospective ETs, in contrast to PHETs, did not mention poor hiring practices, job insecurity as a risk factor, a fact that may be explained by the time of data collection; prospective ETs were questioned at the end of their last internship (December) while PHETs were interviewed at the end of their program (May), when hiring may have started. As Leroux (2013) points out, when the same ETs were interviewed again during their induction (one year later), poor hiring practices, job insecurity was a prominent environmental risk factor. Another line of reasoning holds that prospective PHETs, as specialists with fewer employment opportunities, may be more vulnerable to job insecurity, which might be related to other environmental risk factors they mention (poor welcome; deficient integration; school's unclear organizational culture and standards; lack of material resources; few opportunities to participate in decisions or projects). The factors specific to PHETs may be associated with the high number of student groups that PHETs meet on the same day, the management of open spaces, and their status as the only PHET in school, all conditions that could jeopardise their professional induction. All these factors regarding the PHE context certainly highlight the specific needs to be addressed during these prospective teachers' initial training. It should be recalled that these PHETs also mentioned lack of competencies and lack of organizational culture knowledge as personal risks. Our exploratory research (Grenier et al., 2013) with the framework of competencies published by the Quebec Ministry of Education (MEQ, 2001), pinpointed key competencies PHETs view as their strengths as well as their need for more training. These findings are also consistent with the factors identified here.

On the other hand, when discussing their perception of personal protective factors, prospective PHETs extensively discussed the importance of networking (Eldar, Nable, Schechter, & Marzin, 2003; Lux, 2011; Lux & McCullick, 2011;

Richards & Templin, 2011; Sharplin et al., 2011) for establishing relationships and pointed out how becoming known was essential at the start of the teaching career. Again, this may be because PHETs, as specialists, are often alone in a school, especially at the elementary level, and therefore, enhancing the importance of networking during the initial training and internships would be of great value. Furthermore, they also perceived good knowledge of organizational culture as an important factor for facilitating their induction. In relation to the environmental protective factors, the prospective PHETs saw positive factors specific to PHE including having links with fellow PHE teachers and teaching the subject for which they were trained. Moreover, they also perceived how fair hiring practices and a warm welcome, good integration could contribute to a positive induction process. These environmental factors underscored by the prospective PHETs were ignored by the prospective ETs, as mentioned earlier. As previously discussed, this difference may be because these PHETs were interviewed in May after completing their graduation requirements, while the ETs were questioned in December, when there remained three to four months before graduation.

When analyzing the specific personal factors prospective PHETs identified with our conceptual frameworks, one in particular (feeling out of place, fear of being judged) could be classified within Mukamurera et al.'s (2013) fifth dimension (personal and psychological aspects), and Mansfield et al.'s (2012) emotional aspects. Lack of competencies can fall within Mukamurera et al.'s (2013) fourth dimension (professionalism) and Mansfield et al.'s (2012) professional aspects. Three personal factors may relate to Mukamurera et al.'s (2013) third dimension (organizational aspects): two are included in Mansfield et al.'s (2012) professional aspects (lack of organizational culture knowledge and good knowledge of organizational culture), and one (networking) relates to Mansfield et al.'s (2012) social aspects. As for the environmental factors, unclear organizational culture and standards in a school should be classified as culture knowledge. Two factors (poor welcome, deficient integration and warm welcome, good integration) also fall within Mukamurera et al.'s (2013) third dimension (organizational aspects). Other factors may be classified within either Mukamurera et al.'s (2013) first dimension (poor hiring practices, job insecurity and fair hiring practice) or second dimension (undervalued profession, lack of material resources, few opportunities to participate in decisions or projects, factors specific to PHE, positive factors specific to PHE).

Limitations

Although these two studies were conducted with great scientific rigor, certain limitations must be noted. Because the instruments used to collect data were different (individual interviews and paperwork in a course), there may be differences in the answers of both groups, but we tried to identify and explain it throughout our analysis. Considering the fact that unlike the prospective

PHETs, prospective ETs had been introduced to the concept of personal and environmental risk and protective factors during their coursework, this could have a positive impact on intercoders and intracoder agreements for the first study. But, as results are consistent with the literature in the field, we believe that this is not a major issue. Also significant is that ETs were all working in the Outaouais region, where school boards had identified a lack of teachers. This type of situation may create better hiring practices for attracting and welcoming new graduates, whereas the situation of many PHETs is the reverse owing to instability and job insecurity. As well, we recognize that the thematic coding used for the treatment and interpretation of data may have been influenced by our specific knowledge and understanding of these two school contexts for novice teachers. Thus, the use of intercoder reliability constitutes a good methodological precaution for counteracting this limitation.

CONCLUSION

To enhance beginning teachers' resilience, schools and school boards should try to reduce risk factors that fall, for the most part, within the first and second dimensions outlined by Mukamurera et al. (2013), including poor hiring practices, job insecurity, heavy workload, etc. However, it would be worth developing protective environmental and personal factors as well. Teacher education is an excellent opportunity to develop personal protective factors among prospective teachers. This paper revealed common points and specific features regarding ET and PHET induction contexts.

Both prospective ETs and PHETs highlighted a number of risk and protective factors connected with organizational aspects (Mukamurera et al., 2013) and the social dimension (Mansfield et al., 2012). This leads us to assume that collaboration is a key factor in a successful induction, and that more work should be done to develop this competency during teacher education, as indicated by Boies and Portelance (2012).

However, as Duchesne and Kane (2010) point out, it is also important to take into account the diverse and specific needs of beginning teachers when supporting teacher induction. Our paper also reveals distinctions between prospective ETs and PHETs. While the first group specifically referred to more personal factors concerning the personal and psychological dimension (Mukamurera et al., 2013) and the emotional and motivational dimension (Mansfield et al., 2012), we highlight the need to develop certain life skills (stress management or work-life balance for example) to prepare teachers to better adapt to constantly changing conditions and relationships with others. Finally, in keeping with Larivée (2008), we also identify the need to develop skills for collaborative work with pupils' parents, as ETs are in frequent contact with them.

As for the second group, PHETs mentioned many specific environmental factors connected to Mukamurera et al.'s (2013) first (employment situation), second

(working conditions) and third (organizational aspects) dimensions. In view of the nature of their work, they may be more vulnerable to job insecurity, frequent travelling between schools and the resulting integration difficulties. As well, the PHE specialists are quick to note on the challenges related to the negative perception of their profession. We therefore emphasized the need to develop a good knowledge of school culture and a vision of their future role and contribution to the school and PHE program. What's more, we recognize the need to enhance the value of the profession as well as their personal qualities and competencies in the field.

On the whole, our findings suggest that, although both groups of teachers would benefit from enhanced initial training regarding collaboration, it may be more appropriate to use different tools to support their induction. For example, PHETs may prefer better employment and working conditions (more stability and job security), administrative support, networking possibilities (inside and outside the school, in person or online), or professional development opportunities to improve their competencies and skills. ETs, for their part, may prefer a warm mentoring environment in the school to provide reassurance about their expectations and self-efficacy, good collaboration with colleagues, family support, and professional development opportunities to help them improve their emotional competence and better cope with challenges. This psychological dimension could also be strengthened during teacher education, as advocated by Pelletier (2013).

NOTES

1. The first study was funded by the Fonds de recherche du Québec — Société et culture (FRQSC).
2. Inspired by Théorêt et al. (2003) and Henderson & Milstein (2003).
3. Following ethical standards and procedures, all students signed a consent form to allow the use of their data. We then excluded the data from all students who refused to participate in the study.

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