

Older adults and training: Educational characteristics and pedagogical issues

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Abstract

The training of older adults is a complex and recent field problem in education and training sciences. This discipline has only existed for about fifty years, and epistemological reflection is in its infancy. Scientific knowledge on this subject is still weak and studies are rare. Older adults are therefore a new public to be taken into consideration in adult training. Through a disciplinary approach, the article proposes to address the demographic, economic, ergonomic, etc. findings that help to better target the growing interest in this research topic. The presentation of several key results of our exploratory survey also opens up the reflection on educational issues for this public, which is not fundamentally different from other learners, but which requires special attention with respect to specificities of which diversity is an essential element.

La formazione degli adulti anziani è un problema complesso e recente nel campo delle scienze dell'educazione e della formazione. Questa disciplina esiste solo da circa cinquant'anni e la riflessione epistemologica è agli inizi. Le conoscenze scientifiche in materia sono ancora deboli e gli studi sono rari. Gli anziani sono quindi un nuovo pubblico da prendere in considerazione nella formazione degli adulti. Attraverso un approccio disciplinare, l'articolo propone di affrontare i risultati demografici, economici, ergonomici, ecc. che aiutano a indirizzare meglio il crescente interesse per questo tema di ricerca. La presentazione di alcuni risultati chiave della nostra indagine esplorativa apre anche la riflessione sulle questioni educative per questo pubblico, che non è fondamentalmente diverso dagli altri discenti, ma che richiede un'attenzione particolare rispetto alle specificità di cui la diversità è un elemento essenziale.

Keywords: aging; adult learning; learning specifics; learning environments; didactic/pedagogical knowledge

Parole chiave: invecchiamento; educazione degli adulti; specifiche di apprendimento; ambienti di apprendimento; conoscenze didattiche/pedagogiche

1. Aging and training: an emerging link

The analysis of the demographic situation and the evolution of the aging population allows for a better understanding of the education and training issues of an aging population that will be working longer. This context introduces the issues of evolution and transformation of the professional world, which are at the origin of changes in employee practices, forcing them to adapt. This involves compensatory strategies to maintain performance at work, but also participation in continuing education. However, studies on the second point highlight the decline in access to training as age increases.

Aging: demographic findings

In France, the aging of the population has continued and accelerated since 2011 (Insee, 2020, p. 22-25)¹. According to the announced projections, France would have 76.4 million inhabitants on January 1, 2070, i.e., 9.3 million more inhabitants than on January 1, 2020 (67.1 million inhabitants). The age pyramid for France projected in 2070 shows a more balanced overall distribution of the population by age: people aged 65 or more would be the most affected by the population increase by 2070, with a significant increase for people aged 75 or more. The aging of the European population also continues. The share of people aged 65 or older represented 19.7% of the EU population on January 1, 20¹⁸, compared to 16.2% fifteen years earlier. With a share of the population aged 65 or more clearly higher than all other continents, Europe is affirming the aging nature of its population.

Insee (2020, p. 40-41) also notes the impact of demographic aging on the evolution of the labor force participation rate. The study shows that the increase in the overall activity rate of 15-64 year olds in France is fully supported by the activity of older people. This growing participation in the labor market is linked to pension reforms and restrictions on access to early retirement schemes.

In addition to these elements that treat this phenomenon from a quantitative point of view, aging must also be considered as a continuous, progressive and individual physiological process. The figures do indeed allow us to observe trends and understand certain consequences, but each human being is unique and does not age in the same way or at the same pace as another (de Jaeger, 2002, p. 21-27). Biological systems naturally involve changes and declines in physical and cognitive performance throughout life. However, taking these data as general, the author emphasizes the importance of recognizing that we are not all equal in the face of aging². The pace of aging is thus sustained by the coexistence of several factors such as gender, genetic makeup, the nature of the work performed, diet, physical activity, diseases, etc.

In view of these findings, we assume that this phenomenon may have an impact on our way of life: both in terms of quality of life (better life expectancy and better health) and in terms of career and professional choices (in a context where ways of working are changing). This raises our interest in the perspective of a longer career subject to more change and adaptation: increasingly older people find themselves in a situation of learning or relearning almost continuously (Baracat, 1993, p. 53-62). The likelihood of seeing new training needs emerge, requiring a renewal of training engineering practices, is therefore very real.

1.1 A changing professional context: the need for adaptation and relearning

In the past, people learned a trade that they practiced throughout their career without any particular upheaval (Delgoulet & Gonon, 2000, p. 53). The knowledge initially acquired was gradually enriched through experience. This configuration has been greatly disrupted by the acceleration of transformations (technological and organizational) in the world of work: some professions are disappearing, and others are undergoing substantial transformations. Today, these new requirements are creating a new framework: it is becoming rare to see people

escape this profound restructuring of knowledge that leads to participation in continuing education during their career.

According to Charbonnier & Darchen (2012), the use of new technologies could represent a risk for older workers because they require new practices that limit the use of experience acquired throughout one's working life. It may indeed be difficult to erase the extent of one's practices, which have conformed for several years to a set of skills that precisely define the framework of one's work. These issues concern all workers, the authors point out, but it is important to give older workers the means to take part in these changes, because their efforts will be all the more important as the gaps with their former practices widen.

According to Volkoff et al. (2000, p. 78), the effects of ageing on cognitive abilities are mixed. Immediate memory (elementary mechanism) may be less efficient in older subjects. However, as mentioned in the previous point, ageing is a progressive phenomenon, which means an increase in time and experience. These assets can compensate for the perceptible declines associated with advancing age (decreased performance and slowing of certain mental processes). This results in the implementation, sometimes unconscious, of work strategies in order to optimize one's performance: "these strategies call upon various resources, in particular skills of a cognitive nature resulting from experience" (Volkoff et al., 2000, p. 87, auth. trans)³. The organization in which the work is carried out is therefore essential. It must make it possible to exercise these compensations, particularly through more flexible time constraints.

Moreover, the evolution of elementary mechanisms, described as likely to deteriorate with advancing age, depends strongly on two factors. The first concerns the individual's initial level of education and the second concerns the opportunities to mobilize mental resources throughout life. These two points are sensitive variables according to studies of access to training: the lower participation in training is observed both for the least qualified and for the oldest.

1.2 Participation and obstacles to access to training for seniors

Although training is an essential tool for adapting skills in the second half of one's career (Demailly, 2016)⁴, access to training decreases as age increases. The survey reveals that, in addition to age, other characteristics are determinant in access to training: the best-educated and most educated categories have higher access rates. However, the age profile is not homogeneous: for managers and intermediate professions, the rate of access to training remains stable and drops significantly after age 55. The decline in the access rate is earlier for white-collar and blue-collar workers; it starts at the age of 35 and after 55, the difference is more than 20 points. Thus, for identical employment characteristics, chronological age has an unfavorable effect after age 50 and even more so after age 55.

Data on employees' training needs also show that the older they get, the less they express a desire for training. Demailly (2016) suggests several possible explanations for this withdrawal attitude:

[...] lack of information, doubts as to the concrete consequences, in terms of promotion or salary increase, of training at the end of one's career, less professional investment, narrowed professional horizons, a withdrawal attitude among the least qualified or the oldest employees... (p. 8, auth. trans)

Noting that those who train the least declare themselves the least dissatisfied, Fournier (2003) speaks of a paradox where the most satisfied are the least trained:

[...] the potential benefit of training is all the more limited the older the employee is in his working life, because of the scarcity of opportunities for promotion and the relative length of time remaining in the workforce. Thus, the older they are, the less likely they are to declare unmet needs. (p. 46, auth. trans)

The lower the socio-professional category, the earlier the decline. Thus, blue-collar workers may find that opportunities for promotion become scarce very early on, while managers may, around the age of 40, benefit from professional opportunities that can still boost their careers. In this respect, we point to the major role of the employer, in the sense that “the employer’s reluctance or the definition of the training offer are all elements that slow down the training of older workers” (Dubois & Fournier, 2020, p. 90, auth. trans). The commitment of employees to training therefore depends on the conditions that make it possible to seize opportunities. This is why, noting that access to continuing education begins to decline around the age of 45, Fournier (2003) stresses the importance of taking into consideration the fact that there is still an average of 20 years of professional future “which would necessarily call for an updating of skills, or even a professional reorientation, which could be accompanied by continuing education” (p. 38, auth. trans).

Dworschak et al. (2009) also point out that people often fear learning new things when they are no longer used to it. Hence the importance of “investigating the extent to which the lack of motivation to learn often attributed to older adults may be an expression of a fear of failure” (p. 243, auth. trans), in order to not only recognize these fears, but also to address them. These fears are among others identified in the following point as one of the specificities of seniors’ learning in training conditions.

2. Older adults: a special needs public?

Keeping aging workers in the labor market has been a central concern of the government for several years (Lemaire, 2013). The aging of the French population, combined with the desire to guarantee the pension system, has led politicians to focus on extending the end of careers (an issue that is also observed in European policy guidelines). However, we have just noted the low participation of older workers in vocational training, even though it is a vital means of facilitating the adaptation of employees to changes in the workplace and keeping them in employment longer. This observation leads us to look more specifically at the particularities of the generations at work with regard to training, and then to question the link between age and learning through the results of ergonomic studies on the subject.

2.1 Aging at work and job retention for seniors

The probability of a decrease in functional capacities increases with age, more specifically with regard to “maximum muscular strength, amplitude of joint movement, vision and hearing, sleep regulation, and performances related to immediate memory or to making numerous decisions in a very limited time” (Volkoff et al., 2000, p. 49, auth. trans). However, each person evolves at his own pace, which differentiates us even at the same age. These types of decline may be partly the result of work activity, which is why researchers consider work to be a determining variable in the development of aging.

Indeed, in order to guarantee that older people remain in employment, the report published in the Official Journal of the French Republic on the employment of older people (Cordesse, 2018) proposes several recommendations, including that of developing a culture of lifelong learning. The Economic, Social and Environmental Council (CESE) emphasizes that this strategic axis, being trained and continuing to do so, can represent a guarantee against the risk of unemployment for seniors. On the other hand, it highlights the fact that:

Too often, the question of training for people over 50 is only raised in the company when their jobs are at stake and their retraining needs to be considered. In the absence of a prior ‘culture’ of training, late actions are generally not very effective. (p. 17, auth. trans)

This is why, even after several reforms on vocational training, “the objective of continuity of training throughout one’s working life is far from being assured today” (Cordesse, 2018, p. 17, auth. trans). The rapporteur mentions that the issue lies mainly in the relationship between the employer and the employee, particularly with the professional interview, but also collectively through the development of a training program. The latter must be able to respond individually to all the needs of employees through a diversified training offer, but also according to adapted training methods, as each individual is not in the same position with regard to the same learning, in particular because of his age, experience, seniority in the job, status, etc.

The heterogeneous nature of the population, between cohorts or within a cohort, must be emphasized. Santelmann (2012) shows that cognitive ageing is unequal, contrary to the tendency to perceive older people as a homogeneous population: “the starting and ending potentials vary significantly to the point where there are more different situations among the over-60s than among the young” (p. 28, auth. trans). It therefore seems obvious to him that any training system that addresses learners of very different ages should take into consideration the attentional and cognitive variables of the subjects. He also notes that France is lagging behind on these issues, which are nevertheless essential.

Furthermore, by developing the *theory of gerotranscendence*, Tornstam (2005) challenges certain theories or normative views of aging that may unconsciously project middle-aged specific values and behaviors onto old age:

This is in contrast to much of the thinking within gerontology, where continuity and stability rather than change and development are key concepts. [...] We do not pretend that the theory of gerotranscendence is better or ‘normative free’ in comparison with other theories, but rather that it covers certain aspects of individual aging processes which previously have not been sufficiently covered by social gerontology theory. (p. 3-5, auth. trans)

The researcher notes that aging has often been studied by people younger than the age of their study subjects. He wishes to defend a more positive approach to this phenomenon by allowing older people to express themselves more widely on their personal experience of aging. This direct feedback from the subjects themselves is also the subject of research aimed at analyzing how each working generation views itself and others (Collette et al., 2009). The following section summarizes some of the results of this study, particularly in relation to learning and training.

2.2 Generations at work in relation to training

Three generations at work (or three age groups) have been identified and developed by Collette et al. (2009) with regard to training during adult life (cf. figure 1)⁵. The authors situate the median age at around 40 years old in reference to the middle of life⁶. Considered as a pivotal stage in the career path, its passage implies a changeover between the time already lived (behind us) and the time that remains to be lived (ahead of us). When everything is still possible for some, it is a last chance in terms of professional development for others.

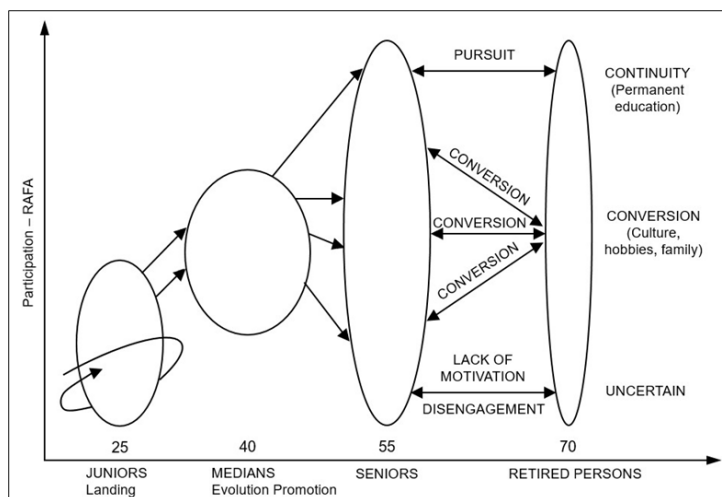


Figure 1. The developmental dynamics of the relationship to training at the three ages of life at work (Collette et al., 2009, p. 173, auth. trans).

The median age appears to be a time that gives priority to “action, change, professional development (adaptation, conversion, upgrading, employability concern)” (Collette et al., 2009, p. 165, auth. trans). Training occupies such a central place that the authors speak of a true ‘golden age’ of adult education. In particular, they refer to the results of studies on participation in training, the peaks of which are between the ages of 30 and 45 (cf. point 1.3.). The median age is in this sense associated with a privileged age for the development of skills and the validation of prior learning, where experience needs to be recognized.

Regarding the senior age, the relationship to training is influenced by the passage to retirement. The commitments, motivations and future projects of senior citizens are part of a relationship to training where intentions are dominated by concerns about this new period in life. The psychological nature of the attitude of senior citizens towards training is thus highlighted by the authors (Collette et al., 2009, p. 170-171):

- A certain apprehension about cognitive decline or a fear of becoming less competent in a learning situation leads to a change or even a decrease in motivation to engage in training.
- A lack of development prospects (promotion, conversion, change in career trajectory) hinders commitment to a new skills development project. The training could then be perceived as belonging to the past.
- A reorientation of the motivation to learn. Some experience this period as an end (a withdrawal scenario that does not lead to a commitment to training). Others have learning perspectives linked to extra-professional themes and in connection with the anticipation of retirement (hobbies, volunteer work, travel, culture, etc.). Finally, still others cannot conceive of the break in the transition to retirement (mainly doctors, senior executives and engineers). They aim to pursue activities and training beyond the end of their professional activity (continuity necessary to maintain a balanced life).
- A desire (or even a need) to pass on their experience to younger people before they leave the working world. However, the seniors point out the lack of relay between generations.

Since the senior age is closer to retirement than the median age, preparation for retirement has a strong influence on decisions about whether or not to engage in training. However, as we argue throughout this paper, the authors point out that it would be too risky to reduce senior citizens to a category that would lead to a homogeneous representation of what it covers. There is not one, but several populations of seniors, notably because of their performance, their motivation, etc. This confirms the unique and personal character of individuals, depending on their experiences and everything that surrounds them⁷. In order to continue the analysis of some of

the particularities of our study population compared to their younger counterparts, the following section deals more specifically with the link between age and learning in a training situation, which introduces the presentation of our empirical framework (cf. point 3.).

2.3 Link between age and learning: the example of ergonomic studies

In a constantly evolving society, employees are forced to evolve at the pace of the changes that are imposed on them. At some point in their career, they must learn or relearn to adapt, update themselves, etc. This context raises the question, “Do we learn the same way throughout our lives?” (Cau-Bareille & Gaudart, 2012, p. 95, auth. trans). To address this question, we refer to the results of ergonomic studies⁸ conducted in a context of technological change and modernization of work tools (Cau-Bareille, 2012; Cau-Bareille et al., 2012; Cau-Bareille & Gaudart, 2012). The results point to three main phases of analysis: before, during and after training. Following this temporal scheme, we propose a synthesis of the salient elements.

The commitment to training raises concerns and an attitude of prudence that is more pronounced among older workers, particularly because of the consequences of training: responsibilities, anxiety about changes and fear of making mistakes. The change itself would be a source of tension, perceived as a kind of negation of the experience and know-how acquired (feeling of insecurity). The fear of having to relearn everything, thinking that young people, born with computers, can do it more easily. The training was conceived at the national level with predefined phases of progression, which obscured the idea of the diversity of the trainees in terms of age, experience, skills and the variability of the pace of progression. This element proved to be a source of significant difficulty in learning and did not facilitate the appropriation of new know-how.

The investigations carried out during the training sessions reveal learning difficulties common to all, but some more specific to the seniors, in particular because of:

- The lack of prior evaluation of the trainees’ computer knowledge (feeling of incompetence having marked a form of insecurity),
- The lack of reference to the real / initial activity of the trainees (the older ones often waited for the practical exercise to understand the theoretical elements),
- The late transmission of synthesis documents (no appropriation of written documents to facilitate the memorization of procedures was possible),
- The important solicitation of the memory (feeling of weakening of the memory with the age felt by the trained as penalizing).

The researchers found that there was a sense of questioning of strategies built with experience. Older learners have a greater need to situate new knowledge in relation to previous knowledge: links between what they already knew and the content of the training in order to be able to project themselves into reality and give meaning to the learning. They are more at ease in a learning situation than during theoretical courses. In addition, the learning situation was more apprehensive for the older students because they were afraid of making irreparable mistakes. These worries slowed down the learning process and reduced their initiative (frequent requests for the trainer’s approval before progressing in the exercises). The fast pace and the rapid sequence of exercises led to a slower progression: the fastest learners (in this case the youngest) were able to repeat the exercises, which was not the case for the oldest learners who needed more time to consolidate their acquisitions before moving on to new learning (high cost of assimilation and memorization).

Familiarization with the tool continued after the training (in a real situation). The post-training observations raise difficulties in terms of appropriation of the tool. The youngest participants were able to develop a wider range of uses for the tool. The older ones preferred to conform precisely to the rules transmitted in training

(theoretical prescriptions), which made them less inclined to look for the limits of the tool. Anxiety, although shared by all, was more pronounced among the older participants, who expressed more anxiety, consulted the written documents more frequently and quickly asked for help from a third person when they were stuck (the younger participants were more likely to experiment to find the solution on their own). These results allowed the researchers to make recommendations (cf. figure 2) regarding the consideration of older subjects in the design of training, in order to optimize their learning conditions.

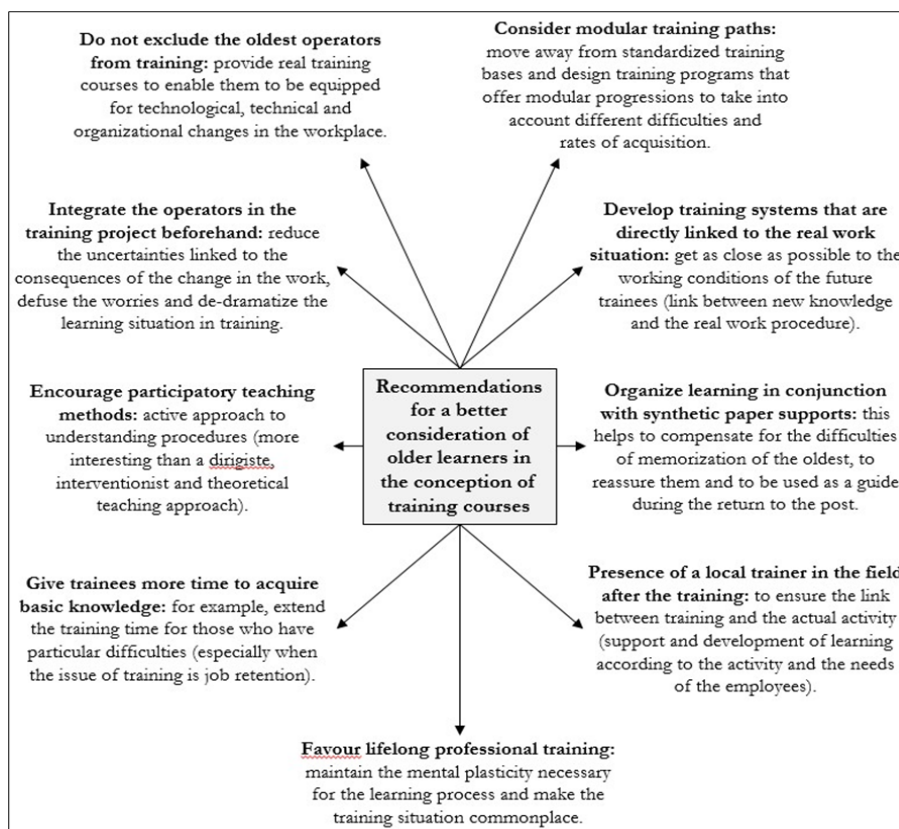


Figure 2. Summary of lessons to be learned for training design based on the results of ergonomic studies (Cau-Bareille, 2012, p. 19-21; Cau-Bareille et al., 2012, p. 138-139; Cau-Bareille & Gaudart, 2012, p. 111-113).

These recommendations highlight the role of the trainer, who must observe the activities of future trainees in their work environment in order to better identify the elements that can or cannot be transferred to the new environment. Starting from the employees' initial activity allows them to be actors of their own change; they can evolve in the training while always having a reference point to their work activity. The appropriation phase of the tool is all the easier if there is a close link between the training and the real work. These recommendations are strongly linked to the concept of professional didactics, which aims to analyze work with a view to training professional skills (Pastré, Mayen & Vergnaud, 2006, p. 145-198)⁹.

In conclusion, age is not an obstacle to training provided that it is adapted to the characteristics of the trainees (Cau-Bareille & Gaudart, 2012, p. 95-114). Time is an essential dimension of successful learning; even though their acquisition rates may be slower, older learners manage to learn just as well as younger ones. These conclusions show the importance of didactic and pedagogical issues in the implementation of adult education and lead us to the presentation of the empirical framework of our research.

3. Exploratory research: salient findings from a dual-entry study of learners and trainers

The elements from the literature discussed in the previous two points form the basis of our research object. After having broadly modelled the methodological framework of our empirical investigation and the modalities of its implementation, this third and final point aims at presenting several outstanding results of our field investigation. The latter consists of an exploratory research, the objective of which is to collect relevant information on the public of older adults¹⁰ in relation to training. The discussion of the results allows us to reflect on the perspectives of research in this field and more particularly in terms of learning environments and training modalities.

3.1 Methodological framework and choice of survey instrument

The objective of this work is not to identify facts about individuals, but rather representations of facts about them. We hypothesize that individual understanding of the elements of differentiation between publics contributes to the consideration of the specificities of older learners in training by trainers. Given the scarcity of work on the training of older adults¹¹ in education and training sciences, this investigation is part of an exploratory logic; the aim is to collect information that will allow us to elucidate the questions raised by the problematization within our discipline. This is why, in order to optimize the understanding of the target public of our study, we opted for a double entry questionnaire research (cf. figure 3) involving the professional learners and the trainers (development of two survey instruments).

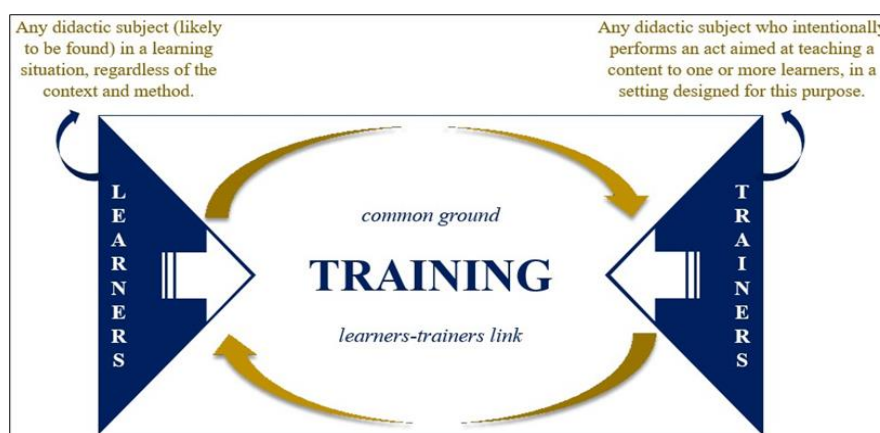


Figure 3. Summary representation of our research field.

This approach aims to contribute to the development of tools allowing trainers to build their activities in relation to the individual and collective specificities of the public. On the one hand, we are interested in the relationship and training practices of professionals of all ages (objectives, how to proceed on a daily basis to maintain/improve knowledge and skills, etc.). On the other hand, we are interested in the representations and practices of trainers who meet heterogeneous publics (awareness and knowledge of the subject, level of importance, adaptation of training, etc.).

The questionnaire for learners is intended for BIATSS¹² staff of the public service, more precisely of the University of Haute-Alsace in Mulhouse (UHA) and the University of Strasbourg (Unistra). The questionnaire for trainers is intended for trainers (occasional and permanent) working in the continuing education services of Mulhouse (SERFA) and Strasbourg (SFC).

In this article, we only discuss a minor part of the results in relation to the thread of our remarks and by focusing our attention more particularly on the interest of the trainers on this object of study and the principal dimensions for a professional to enter into a learning process at work.

3.2 Presentation of key results

Depending on the type of questions, the method of analysis and the tool with which it is carried out differs. The data were analyzed using IBM SPSS Statistics and ATLAS qualitative analysis software¹³.

The first point targets the current practices of trainers: it is a question of identifying how often the measures recommended by the ergonomic studies mentioned above are implemented in the field. The analysis of the state of knowledge and awareness of the trainers for the older learners gives then an overview of the interest of the actors in the field towards this topic. The second point addresses the relationship to adult learning from the perspective of the main dimensions of learning at work. It is a question of pointing out the importance of progress in terms of adapting training to the particularities of the public, which must be situated not in a logic of differentiation, but of complementarity within the group.

The 'trainers' component

Among the data from the questionnaire for trainers, the first thing to note is the low level of knowledge of the concept of professional didactics¹⁴, even though it is one of the recommendations mentioned above (cf. point 2.3.). With 24.7% of the respondents indicating that they were familiar with this concept, this result can nevertheless be considered interesting: developed at the beginning of the 1990s in the industrial sector, it is gradually developing. Such a system requires a great deal of work to set up and monitor, as well as specific skills. However, it seems difficult to envisage its implementation in practice if the training framework does not allow it.

For example, on the basis of the recommendations likely to favour the training conditions of older adults resulting from ergonomic studies (cf. figure 2), the trainers were asked to indicate the frequency of implementation of several measures in the organisation of their training. The answers reveal important variations, on the one hand between the questions (each question being linked to a recommended measure), and on the other hand between the answer modalities (“never”, “sometimes”, “often”, “always”). In view of the nuanced responses, we can emphasize the relevance of the experts’ lines of thought in their work. These data are particularly interesting from the point of view of the differences between the response rates for the modalities at the extremes. As an example, we can note the significant rates of respondents who stated that in a normal context they would ‘never’ implement the following recommended measures:

- Measure n°2: “integrate the participants in the training project before the beginning of the training” for 44.8% of them (against 6.3% for the “always” modality).
- Measure n°6: “extend the training time for those who have particular difficulties” for 40.6% of them (against 8.4% for the “always” option).
- Measure n°7: “to set up a post-training follow-up (to ensure the link between training and real activity)” for 33.1% of them (against 13.4% for the “always” modality).

Yet, we identify among these measures the before, during and after training, which emerge as the three main temporalities of training, whose consideration in the organization of training should promote learning conditions, especially for older people, as argued by Cau-Bareille et al. (2018). With an underlying question, we sought to find out what obstacles might prevent trainers from implementing these measures¹⁵. The exploitation of the responses according to the method of thematic analysis (Paillé & Mucchielli, 2013, p. 231-313) allow us to clearly identify the time indicator as the main constraint. Closely related to time constraints, the constrained

training setting concerns obstacles that, because they are more or less imposed by the setting or planned in advance, do not allow trainers to follow these measures (little room for maneuver, imposed specifications, conditions set by the applicant, etc.).

In addition, we wanted to get a general indication of the importance attached by trainers to the older adult training public¹⁶. Using a five-level intensity scale (“not at all important” to “very important”), the average obtained is 3.21 out of 5. The distribution between the five response modalities shows an important central position and close extremities: 10.6% “not at all important”, 8.1% “not important”, 43.0% “moderately important”, 26.4% “important” and 11.9% “very important”. The central position is also dominant with regard to the question aimed at finding out their self-positioning regarding their knowledge of the training particularities of older learners¹⁷. On another five-level intensity scale (“very low” to “very high”), the average obtained is lower than the previous one: 2.94 out of 5: 11.1% “very low”, 19.1% “low”, 39.6% “medium”, 25.5% “high” and 4.7% “very high”. There is a perfect equality between the two extremes (30.2%), i.e., as many respondents who feel they have a “very low” or “low” level of knowledge as respondents who feel they have a “high” or “very high” level of knowledge. Following this question, we invited participants to express any knowledge/skill needs on the topic¹⁸: the proportion of those who expressed particular needs on this topic (“yes” at 44.3%) was lower than those who expressed the opposite (“no” at 55.7%). In summary, the results on instructors’ awareness of older learners provide insight into field actors’ interest in this public. Given the nuanced results on these issues, we confirm the educational relevance of this research topic.

It can be hypothesized that the majority of trainers who show little interest in the older adult public do not adapt their training to their specificities. Similarly, the results of the open-ended questions suggest that for some, this public is not to be considered as a public with special needs, even though several studies related to this theme tend to underline it. This is why, even if some results can be considered encouraging, they are still insufficient if we want trainers to better take into account these specificities. The mixed opinions on these issues highlight the need to make this topic more common in discussions and reflections on adult education in general.

The ‘learners’ component

By questioning the participants on their ways of proceeding at work in order to deal with problem situations¹⁹, we sought to obtain relevant information on their current practices in terms of learning. The results revealed three main dimensions of learning at work (cf. figure 4). The first concerns the use of relational network: this involves communication, dialogue, mutual aid, sharing of experience, etc. The second is the search for solutions by the professionals themselves. The third is to overcome any difficulties encountered by means of training.

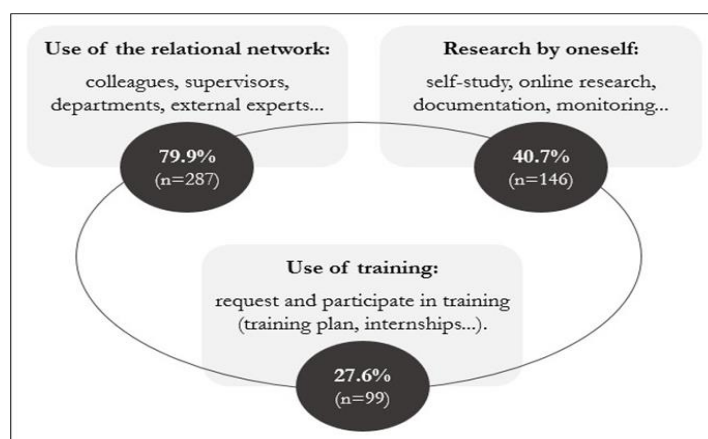


Figure 4. The three main dimensions for a professional to enter a learning process at work.

The majority of the participants (79.9%, n=287) used the relational network in case of possible problems at work. This solution was mentioned twice as often as self-training (40.7%, n=146) and three times as often as participation in training (27.6%, n=99). These results confirm the important place of informal learning in the development of adult skills today (Carré, 2005/2020, p. 169). Our results support the need to give more importance to this type of learning, particularly within work organizations. Indeed, without necessarily being prepared or aware of it, any professional may at some point find themselves in a position to perform an act aimed at teaching a content to a peer. In this case, the benefit is twofold: both for the person receiving the information and thus broadening his knowledge and skills, and for the person passing on the information and valorizing his knowledge by putting his experience to good use. These forms of learning are similar to the concept of the learning organization, which encourages initiative and the development of skills in the field on a daily basis (Conjard & Devin, 2004, p. 5).

These results were then crossed between indicators to identify possible links using a Khi2 test (used to verify the existence of a relationship between two indicators). While age is not related, seniority and job category are significantly related to the “use of training” dimension²⁰:

- Those with the lowest (0-2 years) and highest (13+ years) seniority make the least use of training when faced with a problem at work, while those with median seniority (3-5 years and 6-12 years) make more use of training.

- The higher the job category, the greater the use of training when faced with a problem at work.

On the other hand, with regard to the “self-seeking” dimension, it should be noted that there is a relationship between job category membership and seeking solutions on one’s own when faced with a problem at work (p=0.000). The higher the job category, the more likely individuals are to seek solutions on their own when faced with a problem at work.

If age does not appear to be a determining factor in the relationship with these dimensions of learning at work, seniority and job category present significant links. This is also what we have observed through other cross-references with other questions from the survey, particularly in relation to the work environment. For example:

- The higher the level of seniority, the more they feel they are in a work routine, and the higher the job category, the less they feel they are in a work routine.

- The respondents with the most seniority are the ones who say they feel the least supported by their superiors in their requests for training. They are also the ones who consider their work environment to be the least conducive to learning.

- The higher the job category, the more support respondents felt from their managers.

This suggests that the work environment has a crucial role to play in engaging and encouraging learning among its employees, especially if they have a high level of seniority and are in a low job category.

In summary, age is not the only criterion to consider when addressing the issue of training for older adults. Seniority and professional environment are also essential elements to consider if we really want to ensure that the diversity of learners is taken into account. Our results thus confirm the relevance of Lemaire’s (2013, p. 87) lines of inquiry in concluding his work. They also agree with the results of ergonomists who show that it is less the age of employees that plays a role than their seniority in the company and the work habits that may have been developed (Cau-Bareille et al., 2018, p. 87, 94-95).

4. Discussion and perspectives

Age appears to be less often associated with other indicators than are seniority and job category. It is one criterion among others and not the only one that differentiates individuals. However, while age is not the primary determining factor, older adults do have certain characteristics that tend to become more common as they age: reduced cognitive capacity (especially working memory), reduced participation in training, need to find meaning in learning, etc. This is why, if this public deserves to be looked at in a specific way, this does not mean that we should only plan specific training for them²¹ (it could be relevant to do so in certain fields such as computer science, but not in a systematic way). On the other hand, didactic and pedagogical approaches must be adapted to this public, taking into account its position in the middle of life (time already lived greater than time remaining to be lived). These elements must be taken into account in this sense of diversity.

This refers mainly to the skills of trainers and to the awareness more generally of all those involved in these issues: permanent or occasional field trainers, teachers, company managers, training managers, employees in human resources departments, managers of training organizations, etc. The aim is not to differentiate between this public, but to allow for its specificities to be taken into account. This implies the articulation of the training according to the diversity of the profiles. It would seem that this subject raises various reactions in view of some of the comments made by trainers, which suggest a lack of knowledge on these issues. Further research on these issues and talking more openly and frequently about this topic would reduce misunderstandings, gradually increase interest in this public and be a more systematic focus for trainers when designing training.

Furthermore, we raise a limitation to the three main dimensions of learning at work identified in the learners' corpus (recourse to the relational network, self-searching and recourse to training): how can we ensure that professionals have access to the necessary resources and have enough time to undertake this type of approach? The challenge then lies in the organization and regular follow-up of this type of action: these three dimensions must be supported in a complementary way and reinforced by the work organizations, in order to encourage and maintain professionals in a learning dynamic throughout their career. This may have repercussions on the organization, particularly for training departments, which must rethink their systems in order to offer more training adapted to individual needs and linked to a specific professional context. The objective is to raise awareness among all professionals, including (or especially) those who are the least likely to report seeking solutions on their own (mainly category C respondents and those with the most seniority) and having recourse to training (mainly category C respondents and those with both the least and most seniority). This implies doing the groundwork to seek to engage the more self-effacing and less proactive publics (Fournier et al., 2017, p. 80).

If we look more specifically at the older adults who make up our target public, Collette et al. (2009) propose the idea of involving them in training by allowing them to participate regularly in the training of younger people. This hypothesis can be the subject of new lines of thought, based on the question of the transmission of knowledge in a professional training situation. This approach would allow older adults to continue to develop by designing and leading training, tutoring or coaching activities. This could also be the subject of actions within the framework of end-of-career planning.

In conclusion, the choice and conception of the training system is not the only guarantee of a training adapted to the diversity of the public. Above all, it is important to think about the individual in the system, seeking to adapt the training as much as possible to what he or she already knows. Consequently, the training must be constructed with reference to a multitude of factors: personal, demographic, sociological, psychological, etc., which can ultimately benefit everyone. Furthermore, this work should allow us to deepen this theme within the sciences of education and training, but also to increase research in this sense, in order to develop actions (devices) that encourage the professionals concerned by these problems to ask themselves questions. Among them, the

question of the dimensions of learning at work could open up the reflection on the different learning environments that are conducive to the development of skills/knowledge. On the one hand, in a logic of individualization of paths (learning processes) and on the other hand, in a desire to promote intergenerational learning spaces/environments.

Notes

1. INSEE: National Institute of Statistics and Economic Studies. More details: <https://www.insee.fr/fr/information/1302198>
2. The number of people reaching old age without experiencing all the declines associated with aging is increasing (Gangbè & Ducharme, 2006, p. 297).
3. In developing andragogy as opposed to traditional pedagogy, Knowles (1980) points particularly to the role of experience as a crucial element in taking into account the specific characteristics of the adult in the learning process: “people attach more meaning to learnings they gain from experience than those they acquire passively” (p. 44).
4. European survey “Adult Education Survey” conducted by Eurostat (private and public sector employees).
5. Working on ages and their representations required the authors to establish age brackets (Collette et al., 2009, p. 205): under 35 (juniors), 35 to 45 (medians) and 45 and over (seniors). They accept that repeating the study a decade later would likely have generated a different categorization.
6. Boutinet (2005) defines the middle of life as an “approximate moment from which, in adults, there is a shift in the perception of time already lived towards the time that remains to be lived” (p. 58, auth. trans). It is a feeling specific to each individual who, after having gone through several decades in his life, feels both experience and weariness. However, the feeling of a new beginning with several decades to go is still possible. It will then depend largely on the personal histories and cultural contexts of each individual.
7. From one person to another, biological aging takes a different form: individuals living under the same conditions do not necessarily experience the same effects of age. In fact, inter-individual differences increase with advancing age (Kliegel & Altgassen, 2006, p. 112), including in terms of learning performance.
8. These studies were conducted in the 1990s (a period marked by the rise of computerization).
9. The activity is the main object of study in professional didactics.
10. When we are interested in a type of population, in this case adults of advanced age, this implies a distinction from a younger public. The complexity in addressing this topic is in the naming of this public and what we mean by this naming. If the term ‘senior’ is the most commonly used (whether in the professional or extra-professional field), no legal definition exists. The contours of this public remain difficult to define (Fournier, 2003) and the multitude of common names testifies to this: seniors, older employees, aging workers, older adults, etc. Questioning the relevance of an age threshold to define senior citizens, we define them as professionals in the second part of their career, in reference to the second part of life (Kern, 2016). The senior citizen viewed in this light can be signified by the term ‘older adult’ (or ‘older learner’ in reference to the field of training in which our research is situated). In order to maintain consistency with the common use of the term ‘adult learning’ to refer to lifelong learning, the use of the word ‘adult’ is maintained. By adding the term ‘older’ to the term ‘adult’, we focus our study public more closely on that broad period of life that follows adolescence.
11. “[...] traditionally, studies of older workers and aging have been heavily influenced by a medical perspective, which defines aging as physical and mental decline.” (Tikkanen & Nyhan, 2009, p. 3, auth. trans): by approaching the issue of older workers from the perspective of lifelong learning, the authors speak of a

novel approach, the work of which is still scarce (or even non-existent in several countries), but which should be further developed.

12. Library, engineering, administrative, technical, social and health personnel who perform support activities for the University.
13. 482 respondents to the learners' questionnaire and 239 respondents to the trainers' questionnaire.
14. Closed question: "The concept of 'professional didactics' aims to analyze work with a view to the formation of professional skills (activity = main object of study). Do you know this concept?" (24.7% "Yes" / 41.4% "No" / 33.9% "I have heard of it, but I don't know more than that").
15. Open-ended question: "What obstacles may prevent you from following these steps?" (N=170).
16. Scaled question: "Among your training participants, do you attach particular attention to older learners?" (N=235).
17. Scaled question: "We would like to know your self-positioning regarding your knowledge of the training specifics of older learners. Where do you place your level of expertise in this area?" (N=235).
18. Closed-ended question: "Would you have any particular needs in terms of knowledge/skills on the specifics of training this public" ("Yes", n=98 / "No", n=123).
19. Open-ended question: "In your professional activity, how do you overcome possible problems for which you do not have the necessary skills?" (N=359).
20. Distribution of seniority on the basis of quartiles and distribution of job category according to three groups (A, B and C). Results of cross-tabulations (Khi2 test at the 5% threshold): use of training with seniority (p=0.023) and use of training with job category (p=0.000).
21. This limits the possibilities of transferring the skills of aging employees (Volkoff et al., 2000, p. 113).

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