

Factors influencing work participation for people with a visual impairment

Information Monitoring Summary

Documentary research

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Factors influencing work participation for people with a visual impairment

Summary

Although individuals who have a visual impairment have an education level comparable to that of the general population, they are proportionally much less likely to be employed. In 2006, according to the Canadian Participation and Activity Limitation Survey, only 35% of individuals aged 15-64 who had a visual limitation reported having a job. This rate was significantly lower than that of Quebec individuals without impairments (73%).

A number of personal and environmental factors are associated with work participation by people with a visual impairment. Some personal factors are not modifiable (e.g. severity of visual impairment, age and sex, age at onset of visual impairment, presence of one or more additional impairments). Some personal abilities and life habits, however, can be modified to increase work participation potential (e.g. behaviour, communication and mobility skills, responsibilities, education, work, job search). Several environmental factors also have an influence on the probability of obtaining and retaining employment (e.g. receiving special education, rehabilitation and career counseling services, living environment, residential location, workplace/attitudes and accessibility).

The importance of vocational rehabilitation is obvious. It increases access to and retention of employment, its interventions being focused on personal factors (e.g. work-related compensatory skills; behaviour) as well as on environmental factors of a social (e.g. employer behaviour) and physical (work-site and workstation layout) nature.

Early intervention is a key component of successful vocational rehabilitation interventions. In addition to work readiness, integration and retention phases, a preliminary phase should be provided to teenagers. It is also important to develop an integrated path between rehabilitation (including pediatric and adult articulation), education and work settings, social and governmental organizations and others.

Factors influencing work participation for people with a visual impairment

1. The employment situation for people with a visual impairment

It is recognized that inclusion in the workplace is critical to full participation in society and to financial independence. But people with visual impairments (VI) have historically been under-represented in the labour market.

People with physical disabilities are likely to be confronted with barriers that limit their social participation, especially as regards access to the labour market. Government policies have facilitated their integration into the labour market. In the province of Quebec, the “*À part... égale*” social integration policy adopted in 1984, and more recently the National Strategy for Labour Market Integration and Maintenance of Handicapped Persons in 2008, are examples [14]. However, the employment rate for individuals who have VI remains far below that of the general population, despite the fact that their education level is comparable [35]. The Canadian Participation and Activity Limitation Survey (PALS), published in 2006, found that among people aged 15-64 who had a visual limitation, only a third (35%) reported being employed [6], compared to 73% of Quebecers without impairments [7].

The employment rate of people with VI is also lower than the population with other types of physical disabilities, as noticed by Shaw et al. (2007). Only 41% of their participants aged 22-30 years were employed. This rate was significantly lower than that of the population aged 25-54 who had physical disabilities in general (51%) or who had none (82%) (Government of Canada, 2002, cited by Shaw et al. 2007).

Many people with VI face barriers to their participation in work. For example, this was the case for 59% of individuals interviewed by Shaw et al. (2007) and 79% of participants in the La Grow & Daye New Zealand study (2005). In the PALS, 56% of employed working-age individuals who had VI reported that their condition limited the amount and type of work they could do [6].

The non-participation of this population in work activities resulted in an associated productivity loss that caused a \$4.4 billion loss to the Canadian economy in 2007 [12].

2. Work participation, work performance and personal capabilities concepts

Sandqvist (2007) proposed a conceptual framework of a person's work functioning, based on the International Classification of Functioning, Disability and Health (ICF). The model includes three dimensions involved in work functioning: work participation, work performance and individual capacity. Many of its components are similar to the Quebec Classification: Disability Creation Process developed by Fougere et al. (1998).

Work Participation is the ability and the possibility of an individual to fulfil a role of worker, thereby obtaining and maintaining a job [33]. According to the ICF, this dimension involves 1) learning/work readiness (e. g. training courses, apprenticeships, on-the-job training, etc.) and 2) seeking, obtaining and keeping a job, getting promotions and other advancements , and terminating employment in an appropriate manner [15].

Work performance is the ability to perform in a satisfactory manner various tasks and work activities, and therefore to work [33]. It is contextual [15] and refers to the quality and quantity of work [30]. Work performance is reflected in skills at various levels: 1) physical; 2) time management, task planning, adaptation to change, problem solving, etc.; 3) communication and social interaction [30].

Individual capacity is the positive expression of an aptitude that allows the individual to perform a working task and activity [17; 33]. It is the person's highest functioning level (maximum capacity) in a given area at a given time, as assessed by a measuring instrument in a uniform or standardized environment [15]. Many capacities, or capabilities, may be called upon in the accomplishment of a work task, such as those related to intellectual activity, behaviour, sense and perception, motor activity, etc. Capacity differs from performance in that it is located in a uniform or standardized environment, whereas performance takes place in a real life context [15; 33].

Interactions between these three different dimensions are multiple [15; 17; 33]. Moreover, the quality of participation, work performance and personal capacity results from the interaction between personal and environmental factors (facilitators and obstacles of a social and physical nature) [15; 17; 30]. Lastly, Sandvqist (2007) includes the *time* factor in the model, because of changes that occur over time in individual (e.g. aging, health status changes) and workplace terms (e.g. peak periods, introduction of new technologies, etc.) [30; 33]. Consequently, as noted by Roy et al. (2011), in the work capacity assessment context, it must be remembered that results only temporarily describe the individual's functioning, namely when the measures were taken.

Multiple personal, environmental factors and life habits influence work participation of visually impaired people. They will be presented in the next section of this paper. In addition, there is a universal consensus that people with significant disabilities require vocational rehabilitation interventions designed to support their (re)integration into professional life. This vocational rehabilitation theme will be discussed in a following section, first from a general point of view, then from one specific to visual impairment.

3. Factors that influence work participation for visually impaired people

3.1 Personal factors and life habits

Some personal factors are not modifiable (e.g. severity of visual impairment, age and sex, age at onset of visual impairment, presence of one or more additional impairments). Some capacities and life habits, however, can be changed to increase work participation potential.

3.1.1 Non-modifiable personal factors

- Severity of visual loss
 - Study results differ on this subject. Some authors conclude that visual loss severity is positively associated with work participation, while for others the opposite is the case.
 - For some authors, the severity of visual loss appears to have a positive impact on work participation. Leonard et al. (1999), for example, cited by Bell & Mino (2013), found that people with blindness are more likely to get high-level jobs than those who are partially sighted. Darensbourg's results (2013) fully agree; after participating in a vocational rehabilitation program, individuals who had severe VI were twice as likely to have a competitive job as those whose visual loss was less pronounced.
 - Other authors come to the opposite conclusion, namely that VI severity is negatively associated with work participation. In the Shaw et al. (2007) study, for example, the active employment rate was 36% among young people with low vision aged 15-30 years, compared to 19% for those with blindness. In the La Grow (2003) study, the employment rate difference was also significant among groups who reported having no, little or much residual vision, with respective employment rates of 26%, 35% and 64% [23]. Lee & Park (2008) also showed an inverse relationship between VI severity and employment rate.
- Limitations caused by visual impairment
 - Despite technological development, not all tasks are necessarily accessible to people with VI. For example, some participants in the Shaw et al. study (2007) faced barriers related to unavoidable job requirements, such as driving a motor vehicle.
- Age at time of visual impairment onset
 - Onset of visual loss after age 16 reduces the likelihood of paid employment [9; 24].

- In the La Grow (2004) study, individuals whose VI appeared at a very young age (0-5 years) had a higher employment rate (44%) than those whose VI developed later (25-27%).
- Multiple impairment
 - The presence of one or more additional impairments greatly reduces the likelihood of paid employment [9; 24; 26].
- Sex
 - In several studies, men with VI have a higher employment rate than their female peers [9; 13; 24; 26]. This corresponds to what is observed in the general population, where men have a higher employment rate than women [16].
 - However, other studies have found no correlation between gender and employment [4; 9; 35].
- Age
 - Some studies have found that younger people are more likely to find paid employment than older individuals [13; 24]. For example, in Darensbourg (2013), subjects aged 36 or under were three times more likely to find a job than others. In PALS, among participants with visual limitation, older persons were twice as likely to report being limited in their work than younger (65% of those aged 35-44 as opposed to 33% aged 15-24) [6].
 - Other studies have found no correlation between age and employment [4; 9; 26].

3.1.2 Modifiable personal factors

- **Capabilities**
- Behaviour
 - Self determination and internal locus of control – Capella McDonall & Crudden (2009) assessed the degree of self-determination by asking young people to indicate how much they were responsible for their decisions during their vocational rehabilitation experience. The internal locus of control is the perception of the person as to his control over his destiny and behaviour, his tendency to consider events that affect him are the result of his actions, not factors over which he has little influence, such as chance, other individuals, institutions or the state. The results of Capella McDonall & Crudden (2009) showed that self-determination and internal locus of control were significantly associated with employment rate after participation in a vocational rehabilitation program.
 - Maturity – Young people with a higher level of maturity are more likely to get a job [35].

- Attitude – People who accept their visual impairment and build on their strengths and abilities are more likely to get a job [21] or keep it [28]. According to VI workers interviewed by researchers, as people often do not know what a visual impairment consists of, it is important for the individual with VI to be open to discuss his visual condition with his employer and inform the latter of his skills, abilities, facilitating adaptations, etc. [5; 22]. He should feel comfortable with his visual impairment, and by his attitude, be a VI "ambassador", according to employers surveyed by Golub (2006). For example, this may be being active in engaging conversation with coworkers; demonstrating a positive attitude; insisting on being held to the same standard as any other employee (e.g. etiquette and working standards).
- **Life habits**
 - Communication
 - In the study by Bell & Mino (2013), people who read Braille on a daily or weekly basis had a higher employment rate. The authors provide no explanation for this result.
 - Several other authors have shown that the ability to use information and communication technology increases the likelihood of having a job [4; 8; 26]. In the study by Capella McDonall & Crudden (2009), for example, after participating in a vocational rehabilitation program, 91% of technological aids users held a job, compared to 25% for those who did not use them.
 - In a study by Zhou et al. (2013), adolescents with VI who had a high perception of their computer competence level were proportionally more likely to have paid employment than those in whom this self-perception was low, regardless of the severity of visual loss. The authors explain that, apart from the fact that most jobs now require computer skills, information and communication technologies can also help overcome some of the barriers to work participation [41]. They can, for example, help organize transportation and travel, read printed material, obtain information about job opportunities, fill out job application forms, etc. Jobs access becomes easier [18; 39].
 - Mobility
 - Having good mobility skills is positively associated with work participation [18; [19; 39]].
 - In Bell & Mino (2013), people with VI or legally blind who used a cane in their daily travel had a higher employment rate than the others (57% as opposed to 49%). In addition, users of a rigid long cane had an employment rate of 66%, compared to 47% for users of a folding or

shorter cane and 34% for those using no cane or another aid. The authors do not offer a clinical interpretation of these results.

- Responsibility
 - Among youth with VI, participation in daily activities is correlated with the likelihood of having a job [35]. It is important that children with VI be able to contribute significantly to family and community life so that they learn to take responsibility, an essential quality in the workplace.
- Education
 - It is clear from the studies that the probability of getting a job increases with the level of education or academic skills [3; 4; 8; 9; 21; 22; 24; 26], or at least with the completion high school [39]. According to Bell & Mino (2013), for example, people with a postsecondary degree were twice as likely to be employed as those without a degree. This positive relationship between education and employment rate is also present in the general population [37].
- Employment
 - Volunteer or paid occupation
 - The number of jobs held and recent work experience for young people in transition to adulthood and the workplace are positively associated with their work participation [8; 22; 39]. In the Capella McDonall & Crudden (2009) study, 58% of those who had worked in the two preceding years gained employment following their participation in a vocational rehabilitation program, compared to less than 24% of those who had not recently worked.
 - According to Hayde (1998), cited by Joseph & Robinson (2012), for young people either with or without VI, work experience acquired during adolescence, whether babysitting, mowing the lawn or shovelling snow, afterward gradually allows access to more formal and demanding jobs in terms of responsibilities. Wolfe (2008) is of the same opinion [40]. According to her, young people need to be involved in school clubs, extracurricular activities, and volunteer work, to then move gradually towards the search for a paid job. These experiences allow them to build internalized knowledge of the employment world and essential basic workplace abilities (organization, speed, decision-making skills, travel, etc.) [22; 40].
 - Being unemployed for a long period of time is negatively associated with work participation [36].
 - Job search
 - Limited job search abilities and capacities can hurt job search effectiveness [35]. However, many people with VI face this

limitation. In a study by Sacks et al. (1998), for example, while 81% of sighted students had found their own jobs, it was the case for only 31% of those with low vision and 19% of those who were blind; the others who were working gained employment by means of their teachers and counsellors [32]. Moreover, in PALS, 21% of workers with visual limitation said they were limited in their job search capacity [6]. The population with VI is also often confronted with a lack of support for developing job search skills, difficulty in accessing good job placement assistance or even receiving information on career opportunities [39].

3.2 Social and physical environmental factors

The following factors are positively associated with work participation:

- Special education or rehabilitation services
 - Training in Braille communication or keyboarding [26];
 - Training in the use of information technology [26];
 - Training in orientation and mobility [18; 39];
 - Vocational rehabilitation services [18; 39].
- Career counselling
 - Career counselling services while still in school for blind and low vision youth [39].
- Living environment
 - Encouragement from family, friends and social circle [5; 35];
 - The Bell & Mino (2013) literature review illustrates the key role played by positive support from family and significant others (e.g. peers, mentors, etc.);
 - The use of mentors and role models improves self-esteem [18].
 - Higher expectations on the part of parents about the performance of the youngster in daily activities [35].
- Residential location
 - Live in a metropolitan area [26].
- Workplace/attitudes
 - The attitude and behaviour of a potential employer can be a barrier to employment, as experienced by 24% of people with VI surveyed by Slade & Simkiss (2008). It may be a discriminative attitude, but also ignorance of issues surrounding the abilities and safety of people with VI [22; 25]. This lack of knowledge is liable to cause fear and resistance [22].
 - A qualitative study by Golub (2006) focussed on the perception of employers towards the integration of people with VI. It illustrates the importance of mutual accommodation. According to the interviewed

employers, social and cultural structures must change and be malleable to foster harmonious integration of these workers. The employer must, for example, recognize a) the intrinsic value of having an employee with VI, considering diversity as a strength rather than an accommodation; b) that there is not necessarily one way of doing things; c) there are times when accommodation is needed, for example in terms of working methods; d) that the employer must provide the materials and equipment needed. However, the employer should expect performance of the worker with VI to be the same as that of other employees, to facilitate his acceptance among others in the group.

- According to some qualitative studies, work participation could be facilitated if the employer received education on VI [22; 25]. Of interest on this subject, the German Federation of the Blind and Partially Sighted created the Network for Vocational Participation, whose goal is to educate employers on the potential of workers with visual loss [29]. Moreover, according to employers interviewed by Golub (2006), the employer must also contribute to educate workers, in order to diminish the myths and stereotypes about VI and facilitate integration of the employee.
- Workplace/accessibility
 - Workplace accessibility [19; 25]. Workplace accessibility may be limited by, among other things, the territory covered by the public transit system or an unsafe environment for pedestrians ;
 - Information [19]. According to the employers interviewed by Golub (2006), information (e.g. procedures) should be adapted so as to be accessible to employees with VI.
 - Adapted resources (materials, equipment, technologies , etc.) [22; 35].

4. Rehabilitation at an early age in preparation for future

For the Council of Exceptional Children, Division of Vision Impairment in the U.S., it is clear that children and adolescents with VI need assessment and specialized training (instruction) to help them develop skills necessary to functional independence. This is crucial upon reaching adult age for integration and social participation in areas such as education, work and community life [27]. The acquisition of independence in daily activities at an early age helps the person to develop the internal resources necessary to be able, in the future, to be independent and to find and keep employment, among other things [35].

5. Vocational Rehabilitation

5.1 The importance of early intervention

The *Association des établissements de réadaptation en déficience physique du Québec* or AERDPQ (Province of Quebec association of physical rehabilitation centres) provides a framework for vocational rehabilitation whose phases lead to workplace integration [2]. It applies equally to teenagers who aspire to professional achievement and adults who are looking for a job, want to maintain participation in a present job or want to return to work in a new or previous job.

Early intervention is one of vocational rehabilitation's guiding principles and a key element of success [2]. The AERDPQ (2009) literature review shows that early initiation to the work assessment process for the adult user allows, following documentation and a rigorous and comprehensive assessment, establishing a prognosis and initiating interventions as quickly as possible. It is important that the individual be actively involved in work activities and at early stage in order to develop or maintain worker identity and enter more easily into the rehabilitation process. For teenagers, the start of the 2nd cycle of secondary school is a pivotal stage in which it is important to address the employment life habit, this period serving as a basis for their identity construction in terms of employability [2; 20].

Furthermore, it is important to develop a unique vision and an integrated path between rehabilitation settings (including articulation between pediatric and adult settings), the school system, workplace, social and governmental organizations and others [2; 20]. Whether teenagers or adults, involvement by the workplace, educational institution and family is essential to ensure the rehabilitation process and work integration success [2; 20].

5.2 Phases of vocational rehabilitation

The vocational rehabilitation process can be divided into four major phases: the preliminary phase, which is directed at teenagers, work readiness, job integration and job retention [2].

1) Preliminary phase, for teenagers

- Choice of vocational training;
- Learning and development : some general abilities needed to make the transition to employment, such as those associated with the defense of one's interests; employability (e.g. rules of conduct, punctuality, sense of responsibility); independent living (transportation, communication, personal and civic responsibilities, etc.); interpersonal skills, problem solving, decision making, etc. [2; 20];

2) Work readiness

- Assessment of facilitators and barriers associated with living environment and workplace; assessment of abilities and disabilities, level of accomplishment of life habits; prognosis in relation with targeted job or identification of a new job; employment preparation; identification of necessary aids or adaptations, etc. [2; 20];

3) Job integration

- Support for the job search if necessary; support in the person's adaptation to the environment and in productivity development; validation of actual compatibility with targeted job; determination of necessary short-, medium- and long-term support for independent and lasting job retention, etc. [2; 20];

4) Job retention

- Monitoring to avoid or reduce potential handicap situations; response to a particular problem or a change in the career path, etc.[2; 20].

Different forms of training or work skills-development activities can be used in a vocational rehabilitation measures, such as work capacity evaluation and development, on the job training, etc. [2]. In relation to the latter, on the job training and/or apprenticeship, and job or career specific courses, were most often identified by participants in the La Grow & Daye (2005) study as the most useful in gaining and keeping a job or getting professional advancement. In addition, a work experience placement can be of great importance, as lack of experience often pose an employment participation barrier for young people with VI [22].

Vocational rehabilitation may also be an opportunity for positive action with the employer in order to raise his awareness towards VI and lead him to open up to diversity. There is no doubt that with the aging of the population and the massive leave-taking of baby boomers into retirement, the active labour force market is growing less rapidly than employment, which is creating a vacuum in terms of staffing and labour needs in some sectors [10; 14]. Companies will therefore gain by diversifying their workforce by recruiting, for example, people with impairments. Employers often do not suspect the skills of these workers and are often unaware that it is not necessarily complicated to organize their tasks or adapt their workstations.

Québec management guidelines have been developed for employers who want to improve their practice of hiring people with disabilities. Those published by the *Comité d'adaptation de la main-d'œuvre pour personnes handicapées et Kéroul* [11] and the *Commission des droits de la personne et des droits de la jeunesse* [9] are examples. They offer a variety of information and advice related to reception, job integration and retention policies, ways to overcome barriers, operational procedures, available

resources, measures and programs that can assist the company in its hiring process, etc.

6. Vocational rehabilitation for people with a visual impairment

In order to eliminate many employment barriers, development of compensatory skills is essential before embarking on academic or professional training, or job placement [20]. Moreover, young people need to be guided to develop strategies and social skills that enable them to have positive and effective interactions in various social situations, such as at work [31].

Work preparedness is an important element in the vocational rehabilitation process. For this, Shaw & Gold (2011) developed an instrument to assess preparedness for employment of blind or visually impaired people [34]. It includes 12 scales that measure different aspects related to work participation, such as technology, disability, networking, job search strategies, etc. Its purpose is to help the person to prepare for the job market, according to spheres where needs are greatest. Jo et al. (2010) showed that vocational rehabilitation can allow individuals to increase self-confidence, accept their limitations and focus on their abilities rather than disabilities, and thereby to increase the chance of finding employment. Their study outcomes support the notion that early intervention after the onset of visual impairment is necessary to prevent anxiety, depression, self-esteem loss and reduced expectations for the future.

The importance of vocational rehabilitation (VR) is well illustrated by Bell & Mino (2013). In their study, people with VI who received VR services were more likely to subsequently report being employed full-time (37%) or part time (13%) than those who did not (18% full-time and 8% part-time). Another study by Bell (2010) was conducted between 1997 and 2007. It showed that among users unemployed at the time of their admission to the VR program, on average, 16% were employed during the process of VR or following it. This trend has increased with the passage of time (13.5% in 1997 compared to 20% in 2007).

People with VI not only need to develop compensatory skills, but also to be supported in their job search. For instance, Simkiss & Slade (2008) asked people with VI to indicate which forms of support would be the most help in a job. For this, two out of three mentioned 1) information on the range of jobs carried out by people with VI and 2) advice on the support available to partially or totally blind people in work. They also said "help identifying available jobs" (49%) and "help in gaining work experience" (36%).

A number of employment training programs have been developed specifically for people with VI [38]. Most of them offer training to increase skills associated with work participation, self-confidence and job search strategies, among others. Strechay (2011) describes several U.S. initiatives to promote work integration or retention for people with VI, including:

- Hadley School for the Blind – This school offers innovative vocational training opportunities; employment preparedness and job search courses; webinars on employment-related topics; courses on how to become self-employed with an initial budget of \$5,000 or less. It recently added the Forsythe Center for Entrepreneurship, a program training people with VI for entrepreneurship.
- National Industry for the Blind – This organization provides a opportunities of employment and employment training.
- Alabama Division of Vocational Rehabilitation Services – This organization works closely with the Alabama Institute for the Deaf and Blind. It offers technology exhibitions; has developed a national database on mentoring in order to provide support to people seeking employment; has trained 70 mentors with VI.
- Maine’s Employability Skills Program – This is a training program of 5 days. It is designed to increase blindness-specific competencies, self-confidence and job search strategies to strengthen personal development skills when seeking employment. It is based on presentations and practical training on job search tools and strategies, peer mentoring and self-discovery exercises. Participants have an opportunity to talk with employers about what they really expect from employees. Participants must also develop their own action plan 1) on job search strategies they will use and 2) how they will acquire additional skills needed before starting their job search. The program ends with a series of telemeetings based on the job club model. The participant receives encouragement during job search activities, peer mentoring, an opportunity to assess what works and what should be improved, etc.

In Canada, the Canadian Council on Rehabilitation and Work, funded by Employment Ontario, developed the Workplace Essential Skills Partnership. Though not specific to visual impairment, it is an employability program whose goal is to provide to the participant with disabilities the tools to be competitive in the labour market and the self-confidence to become employed. It offers intensive workshops on various topics related to work participation, such as time management, workplace etiquette, interpersonal communication, interview techniques , etc. [11].

Online information resources also exist to offer support to the job seeker with VI. One developed by the American Foundation for the Blind (AFB) is an interesting example [1]. It offers, for instance, information on employment and job search strategies, tips on resume preparation, interviewing, etc. The resource also offers an online course that covers self- awareness, career exploration, the job search process, etc. The participant can also find a mentor with a visual impairment and communicate with him. The AFB approach has also inspired organizations in other countries such as Denmark, where peer mentoring is now available along with a website that provides employment-related advice [5].

7. Conclusion

People with visual impairment have a significantly lower employment rate than the sighted population, despite the fact that they are as well educated. Factors both personal and environmental are the source of their employability barriers. Some personal factors are not modifiable (e.g. age, sex, visual loss severity). However, many aptitudes, life habits and environmental factors can be modified, including specialized interventions that can increase employment-access potential.

Above all, the overall process of adaptation and rehabilitation is necessary for the development of compensatory skills. Rehabilitation work must, however, be done early to prepare individuals to work and support them in their appropriate career exploration, if need be, and in job readiness, integration and retention. Interventions aim not only to increase skills associated with work participation and reduce barriers in the work and living settings, but also to improve often deficient self-confidence and job search strategies.

The importance of vocational rehabilitation is obvious. It increases access to and retention of employment, interventions being focused on both personal factors (e.g. compensatory capacities, behaviour) and environmental factors of a social (e.g. employer behaviour) and physical (e.g. site and workstation layout) nature.

In the case of young people, preliminary preparation should begin in adolescence in order to promote the transition that leads to adulthood and employment. Some questions still persist, however, such as the types of interventions that should be incorporated in such a transition program to maximize its positive impact as regards employment success.

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