

A Survey of Canadian Medical Laboratory Technologists' Views on Continuing Education in Transfusion Science

A report from the MLT Learning Network on the perceptions, experiences and expectations of Canadian MLTs in four aspects of continuing education in Transfusion Science:

Participation in continuing education

Quality & access

Expertise & learning goals

Participation in the transfusion community

This publication is available online at the MLT Learning Network project website, www.bloodtechnet.ca/mltsurvey

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The 669 MLTs who
participated in this survey.

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About this survey

Scope

This survey of Canadian Medical Laboratory Technologists (MLTs) reports on their perceptions, experiences and expectations of continuing education in Transfusion Science. The questions covered the following aspects related to continuing learning:¹

- Participation in continuing education
- Quality and access of learning opportunities
- Expertise and learning goals
- Participation in the transfusion community

Method

The survey used an online, self-administered questionnaire and cross-sectional design. All Canadian MLTs involved in Transfusion Science were eligible to participate. The survey was designed and piloted by the Canadian Blood Services in consultation with the Canadian Society for Transfusion Medicine (CSTM), Héma-Québec and provincial blood coordinating offices across Canada. Requests to participate were sent to MLTs across Canada by these organizations, by the provincial medical laboratory societies to their membership, and by an open invitation on the Blood Tech Net website, www.bloodtechnet.ca. Data were collected between June 2 and 23, 2009. A total of 669 Canadian MLTs volunteered to complete the questionnaire.

Background

Fifteen years ago, the biggest challenge facing the medical laboratory technology profession was finding sufficient work to make full use of the skills of its members. In the next fifteen years the challenge will be ensuring there are enough MLTs that have the necessary skills and knowledge to meet the new requirements of the workplace.² Like many health care professionals, Canadian MLTs in Transfusion Science are experiencing the demands of a workplace that is rapidly changing due to changes in the health care system, demographic shifts, new technology and new patterns of work that require a more sophisticated set of transferable skills, such as problem solving, communications, teamwork and adaptability. Increasingly, they will need to be continuous learners, able to identify and access the learning they need to thrive professionally and to achieve their personal goals.

The provision of continuing education for MLTs in Transfusion Science is fragmented, shared by employers and various local, provincial and national jurisdictions. In some provinces, MLTs must participate to maintain their license; however most continuing education is not mandatory. What constitutes continuing education is also varied. Some of it is structured and confined to formal settings and classrooms. Other opportunities such as volunteering to present a case study to colleagues or self-directed learning are much more informal.

This survey explores MLTs' perceptions, beliefs and experiences of continuing education in this complex environment. The results will be of interest to those who have an interest in influencing learning in practice: transfusion community leaders, funders, program designers, front-line educators and self-directed learners who are seeking better ways to design, organize and support continuing education for MLTs who want to meet the challenges and opportunities in the coming decade.

Summary of findings

Participation in continuing education

A vast majority (90%) of MLTs participated in some form of structured learning in the past year and 88% received employer support for that training. Those who limited their participation cited obstacles such as busy work loads, high costs, inconvenient scheduling and family obligations. They suggested that financial support, flexible scheduling and continuing education credits are important with respect to fostering higher levels of participation. Younger MLTs and MLTs at the bench level are less likely than to participate and the latter are less likely to receive employer support for their participation in structured learning than their senior colleagues. Younger MLTs are also much less satisfied with their participation levels. Counter intuitively, MLTs who rotate through other laboratories are as likely to participate in structured learning as their colleagues who work exclusively in Transfusion Science. The participation of all MLTs in informal learning is also very high; 90% of MLTs report participating in a variety of independent and self-directed learning in the past four weeks. Again, younger MLTs participate at lower rates in informal learning than their older colleagues.

Quality and access

The survey results reveal positive attitudes among MLTs towards continuing education opportunities they are offered, particularly those in the technical and scientific domain. However, they are less enthusiastic with opportunities that develop leadership, communications and resource management skills. Co-workers and textbooks and standards are the transfusion-related resources most frequently accessed to meet informal learning needs. Older MLTs turn to textbooks first, while younger MLTs look to their co-workers as their first choice.

Expertise & learning goals

MLTs are a heterogeneous mix of knowledge seekers and experts in the technical and scientific knowledge domain. Fewer MLTs identified themselves as either experts or knowledge seekers in the transferable skills domain.

Participation in the transfusion community

MLTs value participating in the transfusion community, and interact most often with their MLT colleagues. However, MLTs on the bench and those who rotate through other laboratories have far fewer opportunities to access these expert networks

Key observations

Participation

The vast majority of MLTs recognize that continuing education matters. Indeed, this survey reports that 95% of MLTs agree that continuing learning is critical to maintaining basic knowledge and skills, and 96% say it is essential to keeping up with scientific and technological advances. MLTs participate in continuing education at high rates: 90% have taken structured learning in the past year; 90% have engaged some sort of informal learning such as searching online or solving a problem within the past four weeks. Furthermore, 88% of MLTs indicate that they have received some form of employer support for structured learning. Their views of the continuing education opportunities that they are offered are largely positive, especially in the scientific and technical domain.

It seems, then, that continuing education for MLTs in Transfusion Science is in good standing. But can we assume that the current approach is equipping our needs for the future? A closer look gives some cause for concern.

Areas of concern

Younger MLTs (18 to 44 years of age) are less likely to participate in both structured and informal learning opportunities than their older colleagues (45 to 74 years of age). Chronic and heavy work loads prevent participation of many MLTs; however younger MLTs are particularly susceptible to a lack of time due to family responsibilities. MLTs who work on the bench are less likely to participate in structured learning, receive less employer support, and have less access to expert networks in the transfusion community than their colleagues in senior positions. MLTs who work part time and those who rotate through other laboratories also struggle for access to these rich networks compared to their full-time, transfusion-dedicated colleagues.

While MLTs say that learning programs in the technical and scientific domain meet or exceed their expectations, they are less satisfied with the programs that develop their capabilities beyond core job requirements such as leadership, resource management and communications programs.

In fact, MLTs have less expertise and fewer aspirations to develop an array of transferable skills such as collaboration, project management and written and verbal communication skills. Yet, MLTs with these skills are highly sought after because of their adaptability to a changing workplace.

Despite these areas of concern, there are also significant areas of strength that can propel our capacity to design continuing learning for MLTs.

Areas of strength

MLTs in Transfusion Science have a strong desire to learn. Only 8% are satisfied with their participation rates in structured learning and would participate more given various forms of support. Younger MLTs are particularly dissatisfied; only 5% are content with their participation rates. Older MLTs continue to participate at high rates despite the expectations that they will soon retire. There is an opportunity for older MLTs to act as mentors to their younger co-workers, especially in light of the fact that younger MLTs turn to their colleagues as their preferred transfusion-related resource. Knowledge transfer from one generation of employees to the next is a key organizational goal of many organizations.

Mentoring is an informal way to improve technical skills and impart knowledge, and support continuous learning. In fact, informal learning among MLTs is quite extensive. MLTs, young and old, are active networkers in the transfusion community. It is through these social networks that key competencies such as communication and collaboration skills can be developed and practiced. Despite its importance, informal learning remains a largely unrecognized aspect of continuing education.

MLTs are a diverse group, with unique demographics, a range of learning aspirations, a variety of education and experiences, and subject to numerous factors that impede their participation. They would greatly benefit from an approach to continuing education that is equally flexible and diverse.

MLTs do not follow a linear learning path through the wealth of continuing education offerings in transfusion science. Their participation varies from individual to individual, and in response to changes in their life circumstances, needs, interests, licensure requirements, opportunities and challenges. Furthermore, the means and places in which they learn are diverse and complex—structured and informal learning, in the workplace and beyond in the transfusion community—all contribute to developing the new skills they need in the modern workplace. In this section we examine some of the factors that influence the type and degree of participation in continuing learning.

■ Participation in continuing education

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- 11 How many participate?
- 12 How do employers provide support?
- 13 What factors prevent participation?
- 14 What factors foster participation?
- 15 What informal learning happens?
- 16 How do younger MLTs participate?
- 20 How do MLTs on the bench participate?
- 22 How do MLTs who rotate through other labs participate?

How important is learning?



Does education have a fixed endpoint after initial preparation for the labour market? Or is it a continuous process that serves MLTs throughout their professional lives?

We have a responsibility to contribute to our growth. [We] cannot always depend on someone else to do it for us.

-A respondent

Our [MLT] staff tend to be complaisant.

-A respondent

Question

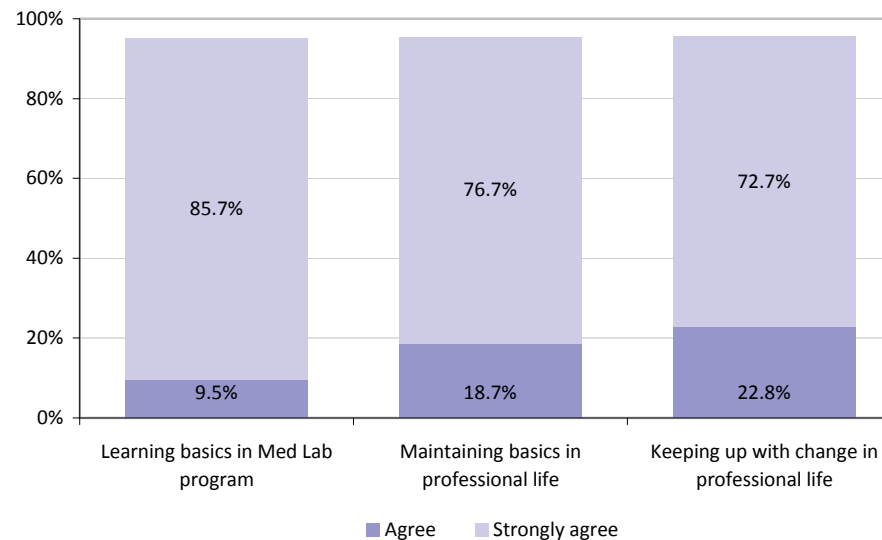
How important is learning to MLTs' working lives:

- the basic skills and knowledge during the Medical Laboratory program
- maintaining basic knowledge and skills during their professional life
- keeping up with change and scientific advances during their professional life

Response

The vast majority of MLTs agree or strongly agree that learning is important during initial education and throughout their professional lives.

Figure 1. Proportion of MLTs who agree or strongly agree that learning is important at various stages of their professional lives



How many participate?



Participation in structured learning is important. However, of particular concern are those MLTs who have not participated in any structured learning for over a year, or have never participated.

Question

How many MLTs participate in structured learning?

Response

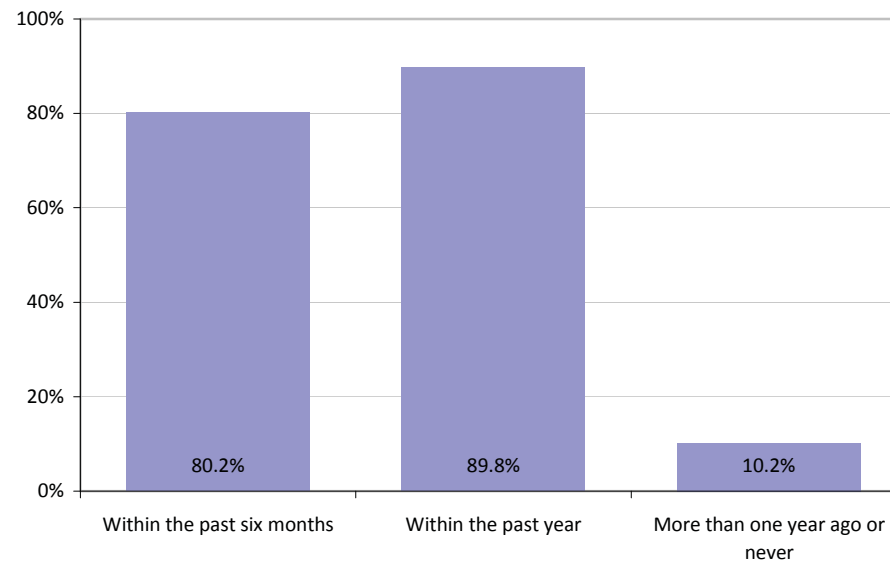
Among MLTs who have not retired, 90% report taking some kind of structured learning within the past year.

Low and non-participation

The remaining 10% report that they have not participated in more than a year or have never participated in any structured learning.

Structured learning – Learning that is organized. It often has learning objectives, leads to a certificate, and typically is offered by an institution. When we refer to continuing education, we often mean structured learning.³

Figure 2. Proportion of MLTs who have participated in structured learning



How do employers provide support?



Without a doubt, managers play a pivotal role in engaging MLTs in continuous learning.

Presently, the director for the transfusion service on our site is very active in continuing education; therefore we are receiving a lot of support. If/when he retires it is doubtful that we will continue to receive this support.

-A respondent

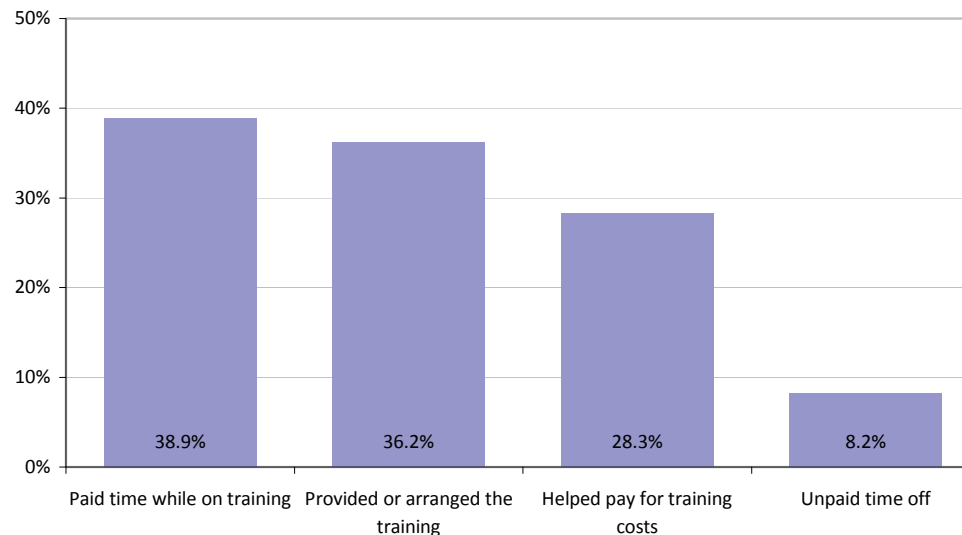
Question

What forms of employer support do MLTs receive for their participation in structured learning?

Response

Of those who participated in continuing education during the past year, 88% indicated that they received some form of employer support for that training. This typically involved paying employees while they were receiving training, providing the training or arranging for its provision, or helping to pay for training costs.

Figure 3. Proportion of MLTs who participated in continuing education during the past year, who report employer support for that training



What factors prevent participation?



For many MLTs, the pursuit of continuing education is fraught with obstacles that are numerous, interrelated and complex.

Charge de travail de plus en plus lourde, manque de personnel. Lorsque quart de travail terminé, le personnel est épuisé!!! Un autre boulot les attend à la maison. Difficile d'avoir énergie et le temps pour formation professionnelle!!! Pourtant l'intérêt est présent!!! Trouvez une solution qui permettra l'intégration de la formation professionnelle à la dure réalité de la conciliation travail/famille et je vous lève mon chapeau!!!

[translated: Increasingly heavy workload. Shortage of personnel. When staff members' shifts are over, they are exhausted!!! More work is waiting for them at home. Hard to find the energy and time for continuing education, although the interest is there!!! If you can come up with a solution for incorporating continuing education into the harsh reality of achieving work/family balance, my hat's off to you!!!]

-A respondent

Question

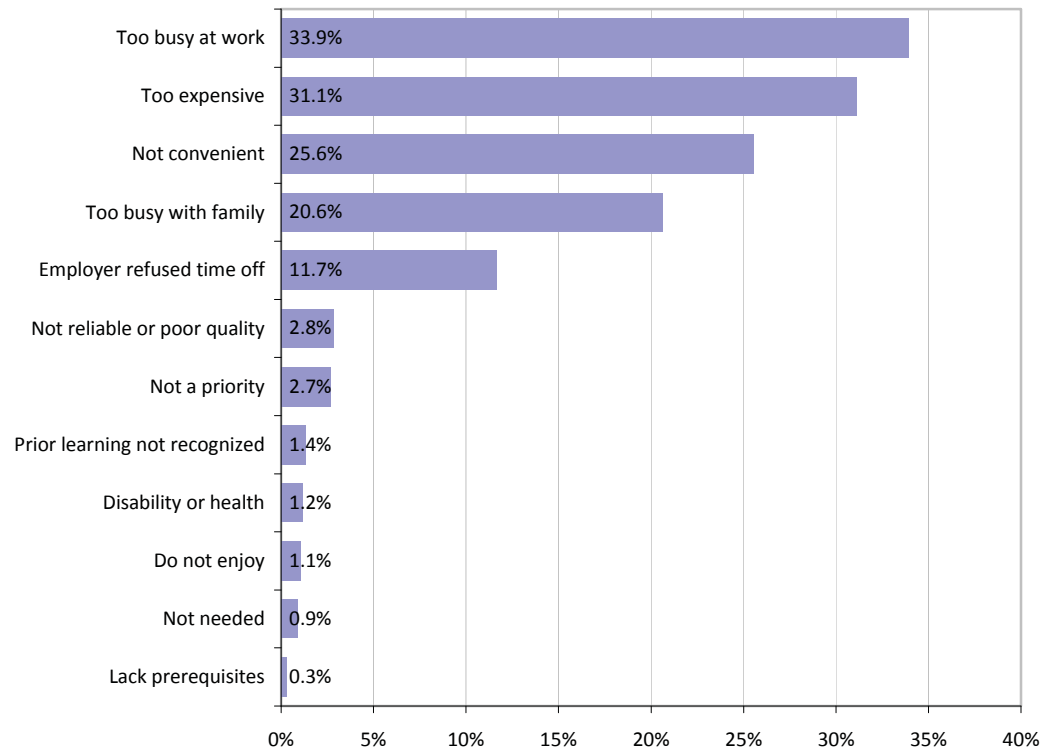
What factors prevent MLTs from taking part in structured learning?

Response

The most common reasons MLTs limit their participation in structured training are that they:

- were too busy at work to take time off;
- considered the training too expensive;
- could not find training schedule at a suitable time; and
- had no time due to family responsibilities.

Figure 4. Proportion of MLTs who report a reason for not participating in continuing education



What factors foster participation?



Financial support, more scheduling options and recognition are the most frequently requested forms of support.

I find we are expected to participate in con-ed, yet, we are always so chronically understaffed, that we must complete [most] activities outside the workplace. Even when...mandatory, it is still considered to be something to be done at work "if time permits". This aspect I do find unfair.

- A respondent

Question

What factors would foster greater participation in continuing education?

Response

Only 7.8% of MLTs are satisfied with the level of their participation and would increase their participation given various forms of support.

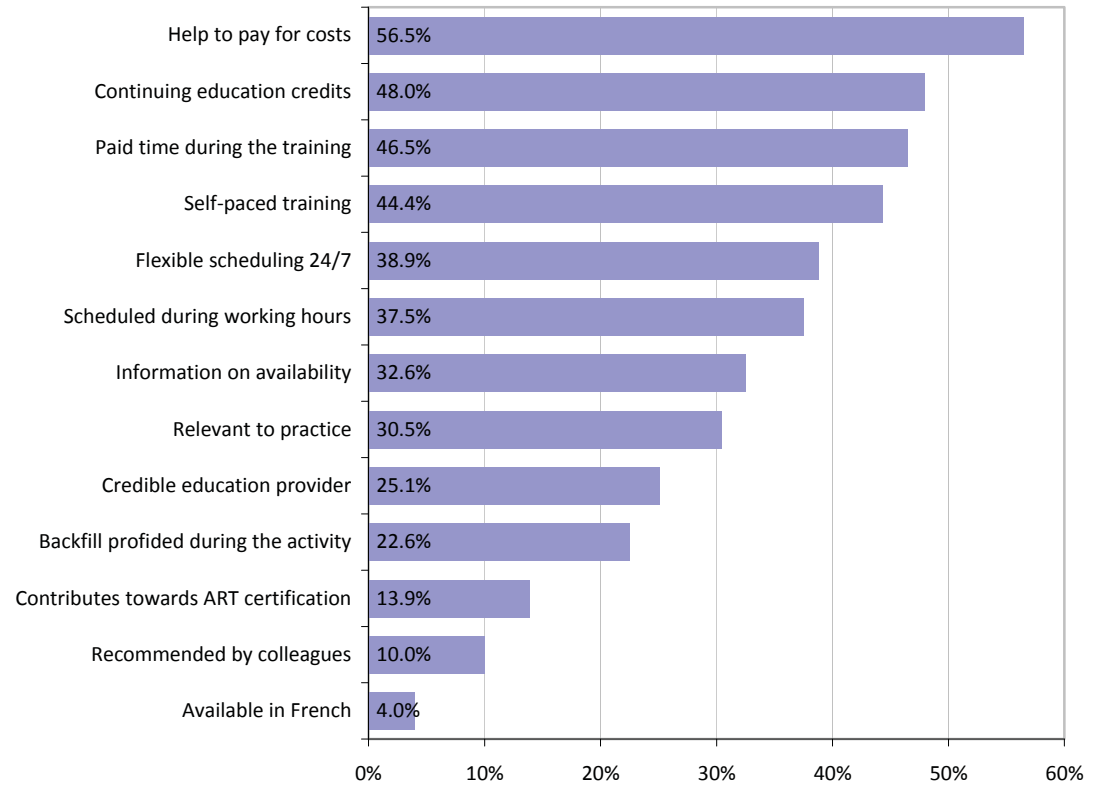
Financial factors and scheduling

A large majority of MLTs report that financial support would foster their participation, especially time off to attend training (47%), or assistance to pay for training costs (57%). A large proportion also reported alternate scheduling such as self-paced training (44%), flexible schedules (40%) and scheduling during work hours (38%) as participation factors.

Links to further learning and communication

Nearly half the respondents reported that their participation would increase if continuing education credits were offered (48%). One-third requested better communication of the availability of learning opportunities (32%).

Figure 5. Proportion of MLTs who would increase their participation in continuing education, given various forms of support



What informal learning happens?



Studies show that informal learning comprises the bulk of all adult learning; yet it remains largely unrecognized as an aspect of continuing education.⁴

Question

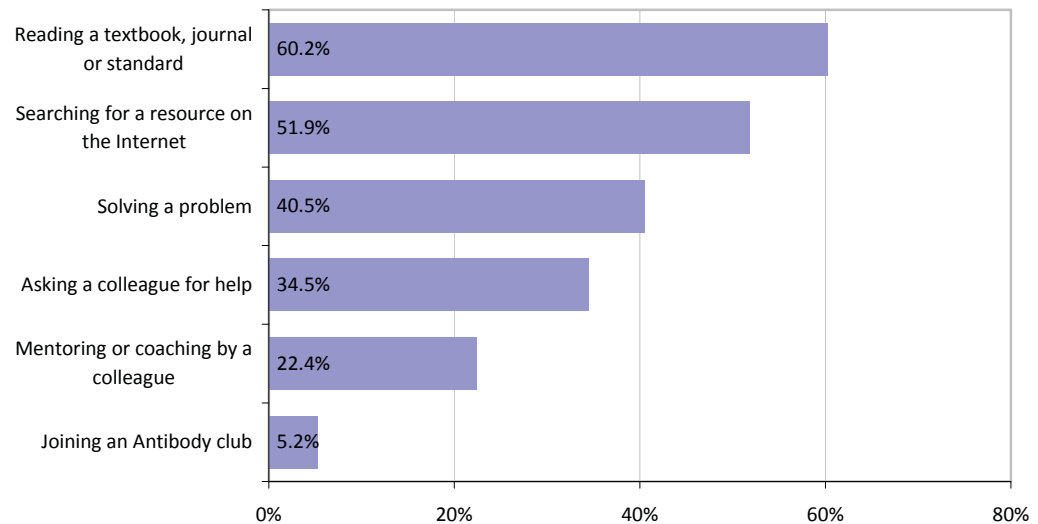
What forms of informal learning do MLTs engage in?

Response

Overall, 90% of MLTs report engaging in some sort of informal work-related training within the past four weeks. Independent forms of learning, such as reading texts, searching online and problem-solving, were the most popular forms of informal learning. More social forms of informal learning, such as mentoring and antibody clubs were less popular.

Informal learning – An any activity outside of organized programs, course or workshops to gain significant knowledge, skill or understanding. The goals and means are determined by the individuals and groups that choose to engage in it.

Figure 6. Proportion of MLTs who report participating in informal learning within the past four weeks



How do younger MLTs participate?



Younger MLTs participate at lower levels in both structured and informal learning than their older colleagues.

With the trend to decrease the size of laboratories and to automate as much as possible, I feel that the vast knowledge of soon to be retiring technologist will be lost forever.
- A respondent

Participation in structured learning

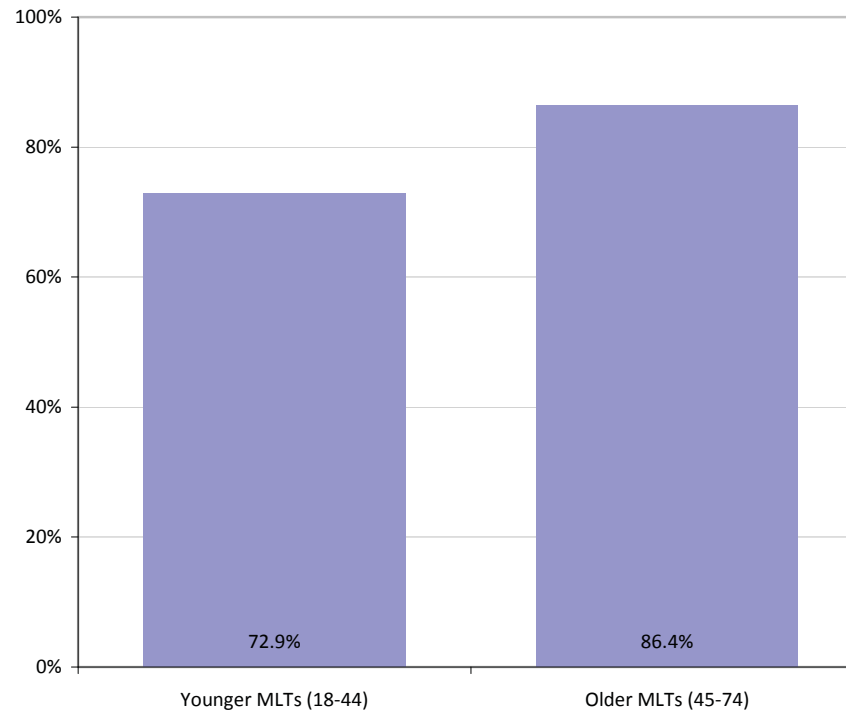
The survey results reveal that younger workers between 18 and 44 years of age are less likely to participate in structured learning (73%) than older workers between 45 and 74 years of age (86%).

These findings point to an important gap within current training patterns. Not only are there fewer young workers available to replace retiring workers, they are not as prepared as they might be when their colleagues leave the workplace.

Older MLTs as a valuable resource

These results also contradict the SCAL and OECD findings that participation in structured learning tends to drop off after age 50.⁵ Older MLTs perceive continuing education as valuable use of their time despite expectations that they will soon retire.

Figure 7. Proportion of MLTs who report participating in structured learning within the past 6 months, by age



Younger MLTs: Satisfaction rates



Satisfaction rates

Younger MLTs are also much less satisfied with their participation level (5%) than their older colleagues (12%). This suggests that younger MLTs are motivated to close the looming knowledge/skills gap, especially if we mitigate the participation barriers they face and reinforce the supporting factors.

Figure 8. Proportion of MLTs who are satisfied with their participation level, by age



Younger MLTs: Participation factors



Participation barriers

Younger and older MLTs identify the same barriers to participation as older MLTs. However lack of time due to family responsibilities is a more significant barrier among the younger workers.

Factors that support participation

Of the various factors that, if present, support participation, the factors more significant to younger MLTs are those that offer paid time during the activity, and scheduling options. Learning opportunities that contribute to ART certification are also more significant among younger MLTs.

Table 1. Significance of factors that foster participation, by age

Fostering factors more significant to younger MLTs (18-44 years)	Fostering factors more significant to older MLTs (45-74 years)	Fostering factors equally significant to younger and older MLTs
Paid time during the activity (62.1%)	Credible education provider (34.1%)	Help to pay for costs
Self-paced training (58.0%)	Recommended by my colleagues (15.4%)	Continuing education credits
Scheduled during working hours (52.7%)		Better information about availability
Contributes towards ART certification (25.9%)		Flexible scheduling
		Relevant to my practice
		Backfill provided during the activity
		Available in French

Younger MLTs: Informal learning



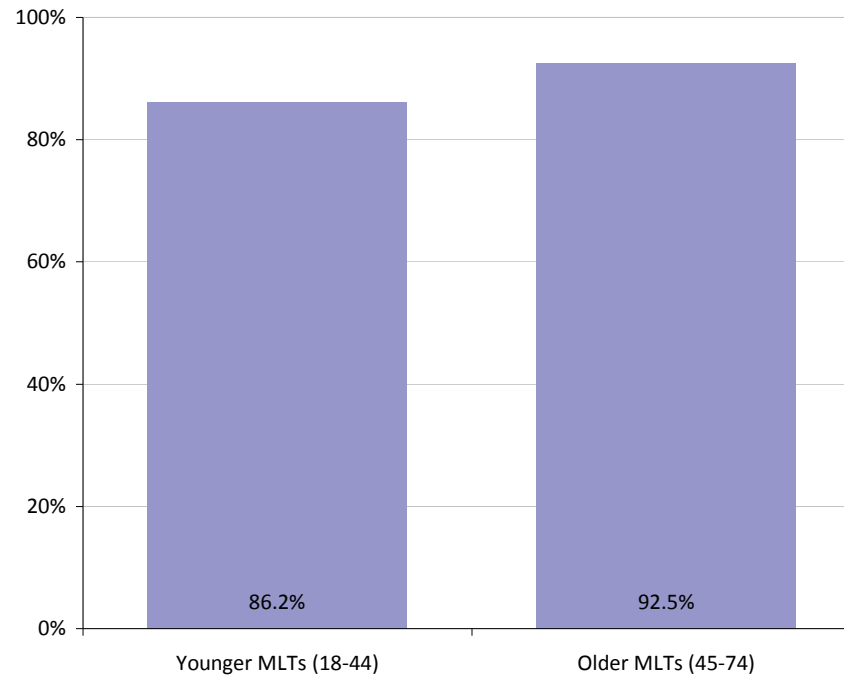
How many of [the new generation] have had to deal with Bombay groups, anti-U etc. What will [they] do if the instrument is not working? The use of equipment is such a small aspect of our work.

- A respondent

Participation in informal learning

The survey results suggest that informal training may be at least partially filling the participation gap between younger and older MLTs in the workplace. However, while both younger and older MLTs participate extensively in informal training opportunities, again, participation is less extensive among younger MLTs.

Figure 9. Proportion of MLTs reporting participation in informal learning within the past four weeks, by age



How do MLTs on the bench participate?



Bench techs participate at lower levels in structured learning, and receive less employer support than their colleagues in senior professional roles.

Continuing Ed has always been something I have done. I enjoy learning but I make the same [pay] as someone who has never taken any classes. So why would I spend any more of my free time taking another class?

-A respondent

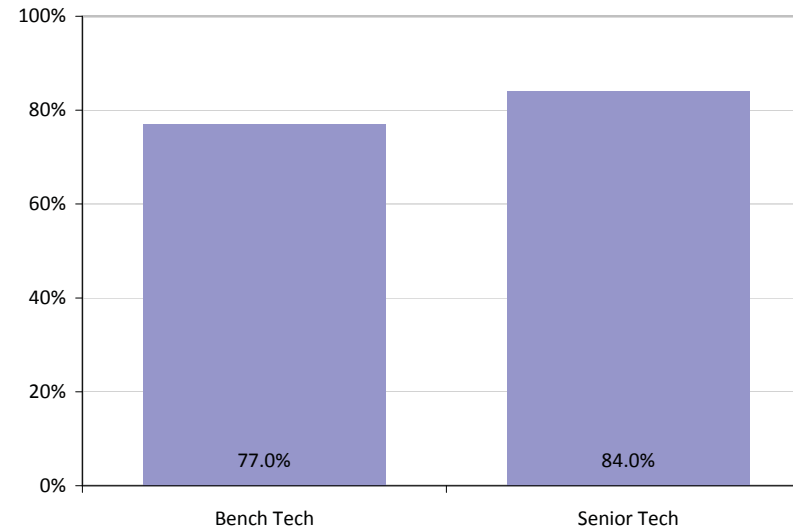
I wish my job position could receive the support from my employer that is given to others within the lab. It is very frustrating to... take courses using my own resources and time because I am continually denied the opportunity during work hours. I am getting exhausted working fulltime, trying to educate myself and run a family.

-A respondent

Participation rates

The survey results reveal that MLTs on the bench are less likely to participate in structured training (77%) than senior MLTs (84%).

Figure 10. Proportion of MLTs who participated in structured training within the past six months, by primary professional role



MLTs on the bench: Employer support



It has been common practice in the past...that management are sent to conferences... [some of which] address issues that are of concern to the "bench technologists" and not management issues. I would like to see more of the regular workers and supervisors attending conferences so that they can share problem solving ideas with their co-workers.

- A respondent

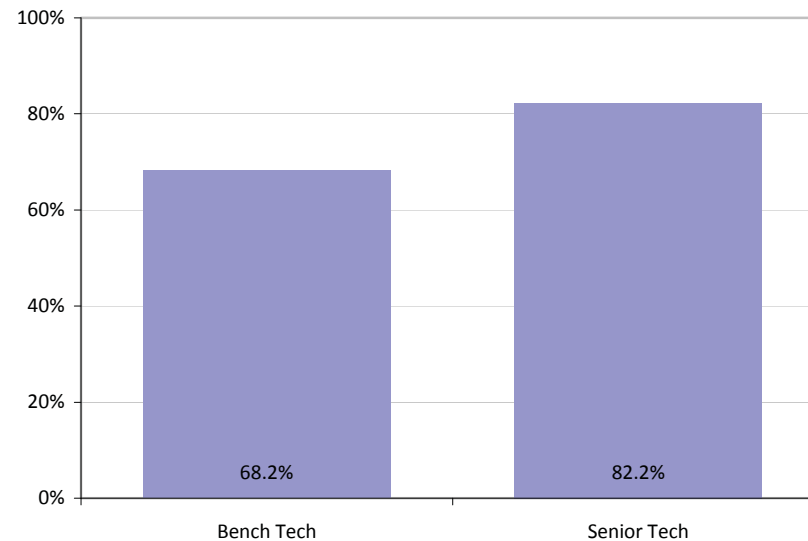
I am senior technologist but I mostly do bench work. I have access to continuing education and meetings with larger groups. This allows me to have a broader perspective and access to information that my colleagues don't have....[All] very helpful in understanding issues which you can not appreciate at the bench level

-A respondent

Employer support

MLTs in senior positions are far more likely to have employers who support their continuing education, by providing paid leave time, providing or arranging for the training, or by paying for some or all of the costs of training.

Figure 11. Proportion of MLTs who participated in continuing education within the past year, who report employer support for that education, by primary professional role



How do MLTs who rotate through other labs participate?



Surprisingly, there is no difference in participation rates between MLTs who rotate through other laboratories and those who specialize exclusively in transfusion science.

As our experts retire we need to ensure that we are teaching complex antibody investigation and problem solving. With the advent of automation and generalists we are losing the expertise.
- A respondent

Of all the con. education that I come in contact with, transfusion medicine offers the most opportunities for learning. I would actually like to see more opportunities in other disciplines come available
- A respondent

Participation in structured learning

MLTs who do not specialize in Transfusion Science (that is, in the last six months spent less than six months working in the transfusion science) are as likely to participate in formal work-related training as their colleagues who spent the full six months.

Like many others, I rotate through five different lab areas and we only do basic transfusion medicine. We will do a panel to identify an antibody, but our work usually gets sent along with the patient's blood to our reference lab for further testing and identification. I would love to do more investigation but our lab is not capable of taking on any more work, due to staff shortages.

-A respondent

Participation in informal learning

MLTs who rotate through other laboratories are also as likely to participate in informal work-related learning. While they participate less often in Antibody clubs and have fewer opportunities to ask colleagues questions, they compensate by reading textbooks, searching the internet, solving problems and mentoring and coaching.

Current approaches to continuing education for MLTs must respond to the diverse needs that have come about in the context of the broadening range of competencies MLTs are expected to bring to the workplace,⁶ the uniqueness of the settings they work in, and work-life balance. Far from being a homogenous group, MLTs are a group with widely different aspirations and experiences who face a variety of constraints, resources and opportunities. For their part, MLTs must make sense of multiple approaches to learning delivered by a variety of providers in a range of institutional contexts. In this section, we ask MLT how well their needs and expectations for structured and informal continuing education are being met.

■ Quality & access

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- 25 The diversity of MLTs' learning needs
- 26 What resources are consulted?
- 27 What factors prevent resource use?
- 28 How does resource access differ for younger MLTs?

Does continuing education meet expectations?



Most continuing education programs focus on basic skills upgrading and job-related training. While these are important, they fall short of providing the varied continuing education opportunities MLTs need.

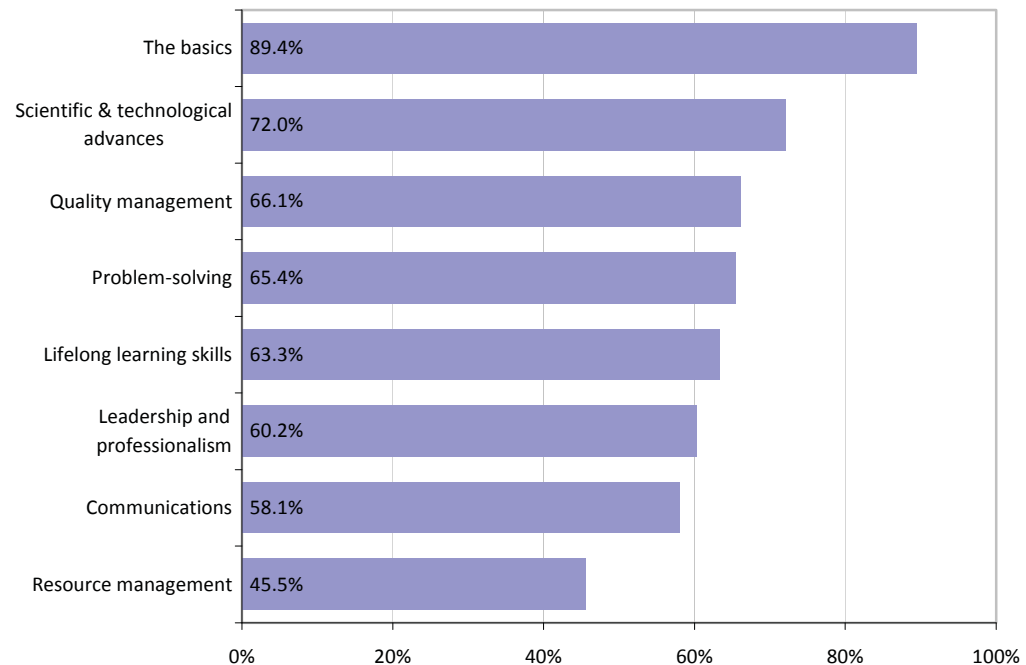
Question

Do continuing education opportunities meet MLTs' expectations?

Response

MLTs' views of continuing education opportunities in Transfusion Science are largely positive. High proportions of respondents report that continuing education providers are meeting or exceeding their expectations in nearly all categories, particularly in the core technological and scientific domains. However, they are less satisfied with continuing education opportunities that offer a more sophisticated array of capabilities such as leadership skills and resource management and transferable generic skills such as oral and written communication.

Figure 12. Proportion of MLTs who report that continuing education in Transfusion Science meets or exceeds their expectations



The diversity of MLTs' learning needs



Many MLTs took the opportunity to explain why they sometimes do not participate in available learning opportunities. Difficult to discern in the aggregate data, this sampling of comments underscores the diversity of the contexts in which MLTs continue their learning, and challenges providers to find better ways to support their needs.

Inappropriately scheduled

It would be nicer if there were more 1/2 day learning sessions presented that people could attend.

In a very busy small rural hospital working in all areas there is no time for a bench tech during a normal work day to do any continuing education on work time. I... am limited to what I can do because of distance from major centres....The internet is a great resource that I try to use.

Since we work in a very busy Antibody Investigation/Reference Laboratory, the staff need backfill to attend formal educational sessions. Online sessions would be most useful to staff so they can access them in a flexible time frame.

I'd love to do more learning, but as a regular part-time MLT we get the short end of the stick for shifts; so working multiple nights and varying shifts makes it almost impossible to have some resemblance of a normal life.⁷

I practise in a remote area where educational opportunities are limited. Weekend seminars, internet & correspondence courses as well as webinars are more likely to be accessed by my colleagues and myself.

Pedagogically unsuited

There does not seem to be any educational material available other than basic, advance, review or retraining. There needs [to be] something in the middle

All of the opportunities focus on the same topics- safe work practices, TRALI etc. We do not focus on transfusion medicine as a science so we do not obtain any of the scientific research based data. We also do not get insight into transfusion medicine on a global scale.

More programs of shorter length would help, that way you can concentrate on it for a week or two at a time. Internet learning opportunities are good that way you can go at your own pace when time permits, good to have some deadlines that way it is not totally put on the back burner at busy times in life/work.

I think there should be more courses offered that are refresher courses that would tie multiple disciplines together. This knowledge tends to fade if you only work in one department.

It would be very good to have a website where:
1) One can identify and workout complex transfusion related problems ...2) Technologists can share interesting cases or questions; 3) Latest transfusion related developments ... 4) What should we as Technologists be teaching Residents of Anesthesia and Hematology?

Not clearly linked to further learning or employment opportunities

...continuing Ed has always been something I have done and I enjoy learning but it has never made a difference in the pay check. I make the same as someone who has never taken any classes. So why would I spend any more of my free time taking another class?

... the social aspects of being a MLT are rarely addressed. The issues of child care, shift work, job sharing opportunities, med lab opportunities for economic upward mobility are always presented in the narrow scope of bench tech then supervisor then lab manager. There is never any mention of employment branches that rely on MLT skills and knowledge that are not med lab tech bench work type positions...

I believe in continuing education and have taken many courses continuously throughout my career. However, most of the courses I have taken are not acknowledged for credits towards a degree. I have taken several university and college courses however very few have any relevance to my work. It is frustrating.

I am very discouraged with the expectations of the College requirements vs. the amount of available learning resources for technologists these days.

What resources are consulted?



For many MLTs learning in the workplace occurs quite naturally through self-directed activities. Some of the learning experiences reinforce knowledge and skills acquired in structured learning and others present opportunities to explore new content areas without having to enrol in a course.

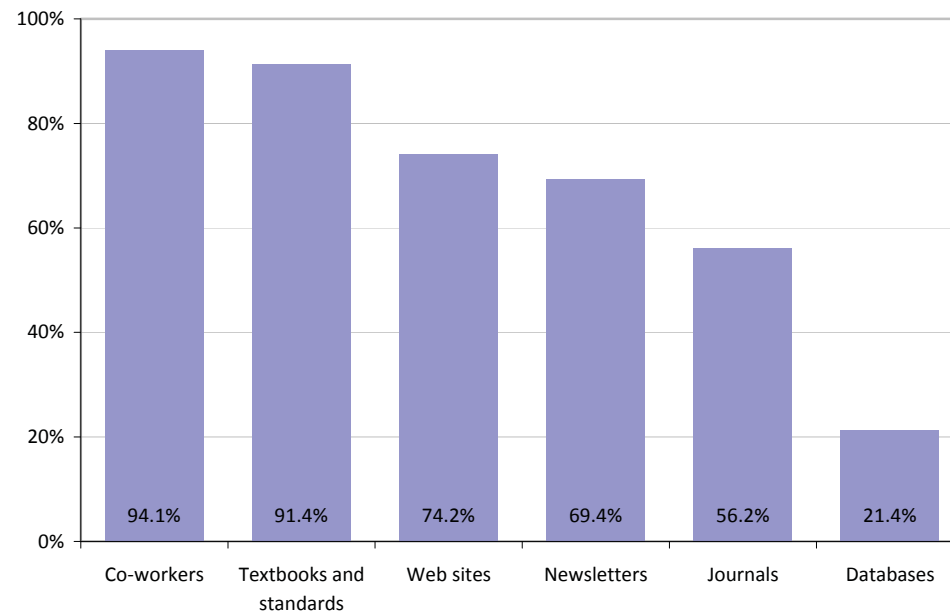
Question

Which resources do MLTs use to learn about transfusion issues?

Response

Nearly all (99%) MLTs made use of some type of resource to learn about transfusion-related issues in the past year. The vast majority consult their co-workers (94%), and textbooks and standards (91%). A majority consult websites (74%) and newsletters (69%). Fewer consult original sources such as journals (56%) and databases such as PubMed that search these sources (21%).

Figure 13. Proportion of MLTs who consulted transfusion-related resources in the last year



What factors prevent resource use?



MLTs who pursue informal learning with the intent to develop job-related skills or knowledge must rely on whatever resources available to them.

Question

What prevents MLTs from using various transfusion-related sources of information?

Response

The most frequently cited reason for not consulting transfusion-related resources was that that they were not considered, or that they were unavailable or inconveniently located. Other reasons varied across types of sources. Some sources were considered unreliable (co-workers), other sources were unavailable (journals), and many sources were simply never considered.

Table 2. Reasons that MLTs report for not using various transfusion resources

Reason	Source	% of non-users citing reason
Not reliable	Co-workers	31%
Not available or inconvenient	Journals	43%
Not needed	Textbooks and standards	52%
	Co-workers	35%
Not considered	Databases	63%
	Journals	43%
	Websites	49%
	Newsletters	60%

How does resource access differ for younger MLTs?



Younger MLTs rely on their co-workers; older MLTs rely on print materials.

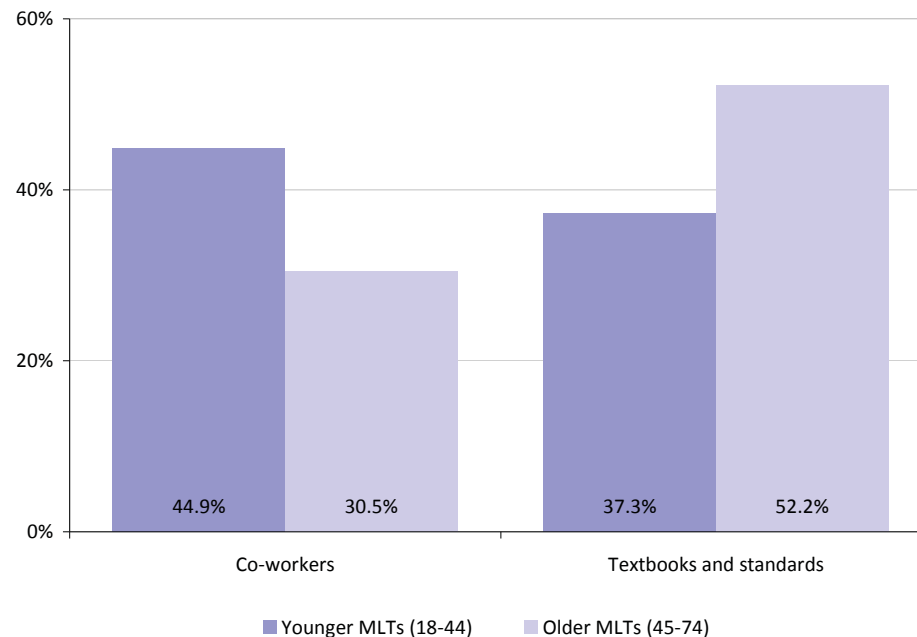
Resources for informal learning

Younger MLTs (18 – 44 years old) report that they would turn first to co-workers; older MLTs (45 – 74 years of age) turn to textbooks and standards as their primary source or transfusion-related information.

Mentors

As their preferred first resource, co-workers of younger MLTs can be effective mentors. They have a unique opportunity to influence their attitudes about the value and purpose of continuing education, demonstrate the link between increased skills and better work opportunities through their actions.

Figure 14. Proportion of MLTs who report the first transfusion resource they turn to, by age



In 2002, the Organization for Economic Cooperation and Development (OECD) noted that Canada would benefit from a lifelong learning system that responded to the needs of individual adults by enabling them to become independent and autonomous learners, by helping them understand when continuing education is useful and what steps they need to pursue available learning opportunities. In other words, to guide but not decide their learning trajectories.⁸ In this section we asked MLTs where their professional expertise and learning aspirations lie in a number of categories within the technical and scientific and transferable skills domains.

■ Expertise & learning goals

- 30 What are MLTs' scientific and technical learning goals?
- 31 What transferable skills do MLTs want to develop?

Technical and scientific expertise



Key to understanding adult learning (and not always apparent in surveys), is recognizing that MLTs are not a homogenous group, but unique individuals with different learning aspirations.

My area of practice is very narrow and often there is no con ed available that matches my specific work needs. While I take more general courses to obtain the credits I require to keep my licence to practice—and they are interesting—they are often superfluous to my actual needs.
-A respondent

Question

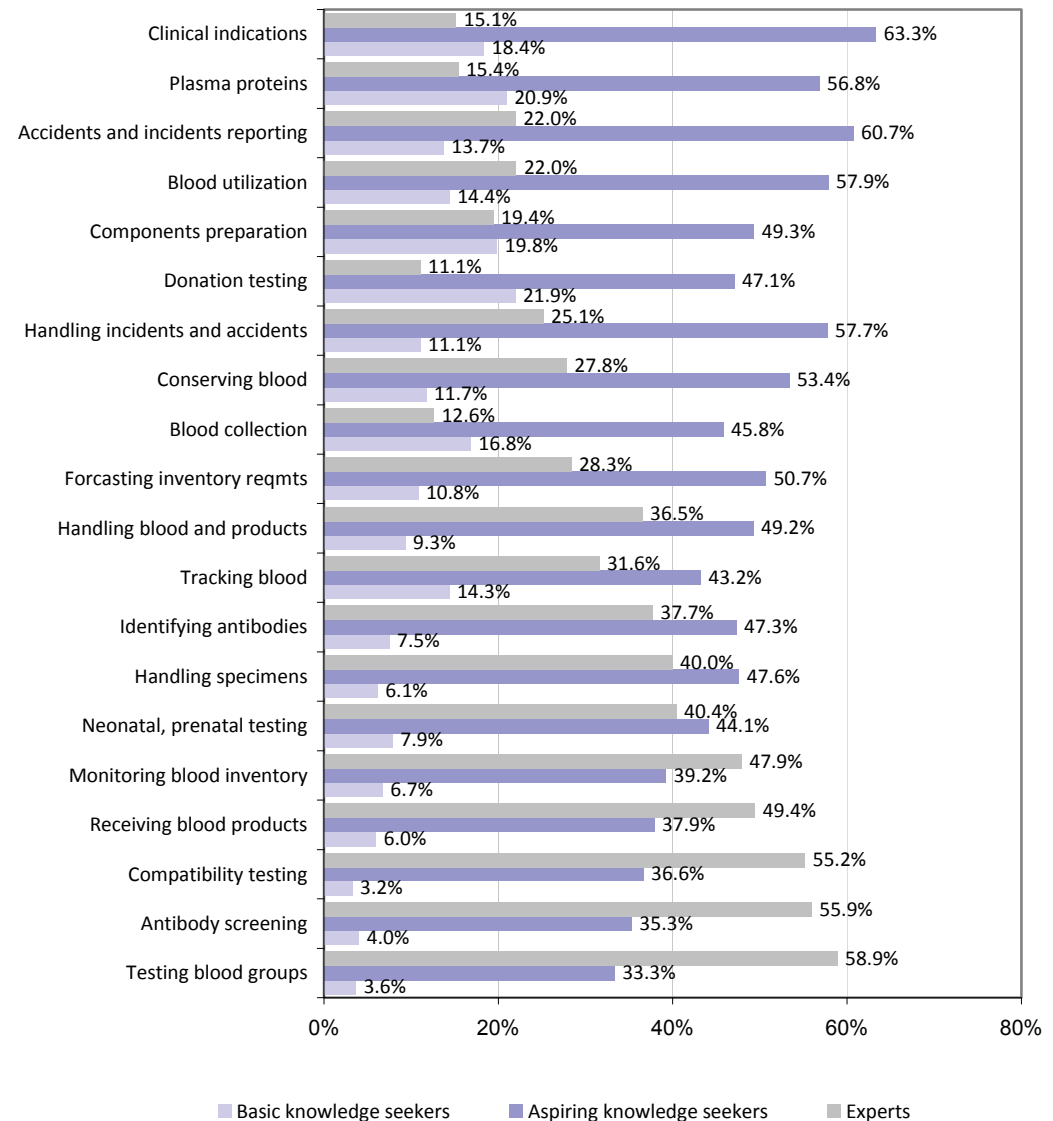
For selected subjects within the technical and scientific domain, respondents were asked to categorize their level of expertise:

- Basic knowledge seekers, for those who were largely unfamiliar with a given subject and would like to broaden their understanding;
- Aspiring knowledge seekers, for those who were familiar with the basics, and would like to deepen their understanding;
- Experts, for those who have a deep understanding and can teach the topic.

Response

Experts identified testing blood groups (59%), antibody screening (56%) and compatibility testing (55%) as topics in which they are most often expert. Aspiring knowledge seekers most often identified clinical indications (63%), accidents and incidents reporting (61%), blood utilization (58%) and plasma proteins (58%) as topics of interest. Basic knowledge seekers are most interested in donation testing (22%) and plasma proteins (21%).

Figure 15. Proportion of MLTs who are knowledge seekers and experts in various subjects in the technical and scientific domain



Transferable Skills

Transferable skills are broader, cross-functional capabilities that enable gaining more skills, and may lead to innovative practices.

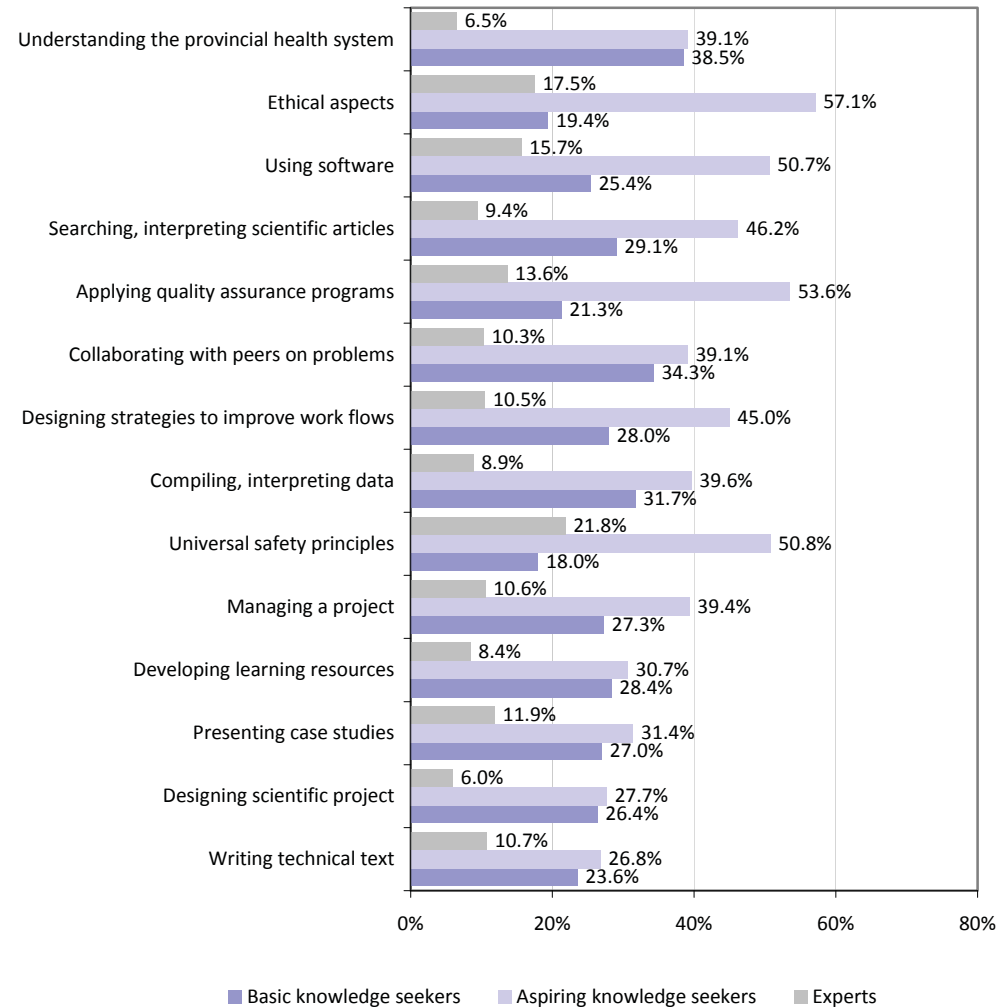
Question

What levels of expertise do MLTs want to achieve in various transferable skills?

Response

Far fewer MLTs self-identified as either experts or knowledge seekers in the transferable skills domain than in technical and scientific domain. Experts identified universal safety principles (22%), ethical aspects (18%) and software skills (16%) as topics in which they were most often expert. Aspiring knowledge seekers most often identified ethical aspects of their work (57%), applying quality assurance programs (54%) and using software (51%) as topics of interest. Basic knowledge seekers are most interested in understanding the provincial health system (39%), developing peer collaboration skills (34%) and compiling and interpreting data (32%).

Figure 16. Proportion of MLTs who are knowledge seekers and experts in various transferable skills



We often see learning as a solitary, independent pursuit, one of accumulating facts and information. On the contrary, learning is also a deeply social activity and there are a number of reasons why learning from and with others is a foundational part of continuing education. First, individual learning is supported by being exposed to and reflecting on how others think. Second, the transfusion community is a site where colleagues can act on what they learn and develop an appreciation of how MLTs and other health care professionals work together. Third, people very often participate in informal learning experiences with others, and through these experiences evolve an their identity as someone who knows about, values and contributes to the transfusion speciality. The questions in this section provide a glimpse into the nature of MLTs' activities within the transfusion community.

■ Participation in the transfusion community

- 33 How important is the transfusion community?
- 34 How do MLTs participate in the transfusion community?
- 35 With whom do MLTs interact?
- 36 How does participation differ for MLTs on the bench?
- 37 How does participation differ for MLTs who rotate through other labs?

How important is the transfusion community?



*That communities are valuable sites for learning is based on the idea that MLTs who feel **supported** in their ongoing learning and practice are more committed and effective than those who do not receive such confirmation.*

I work at a small hospital and am often the only one working in the lab after hours. When questions arise when doing blood bank it would be great to have a place to call that could answer any question relating to antibodies, crossmatches etc.

-A respondent

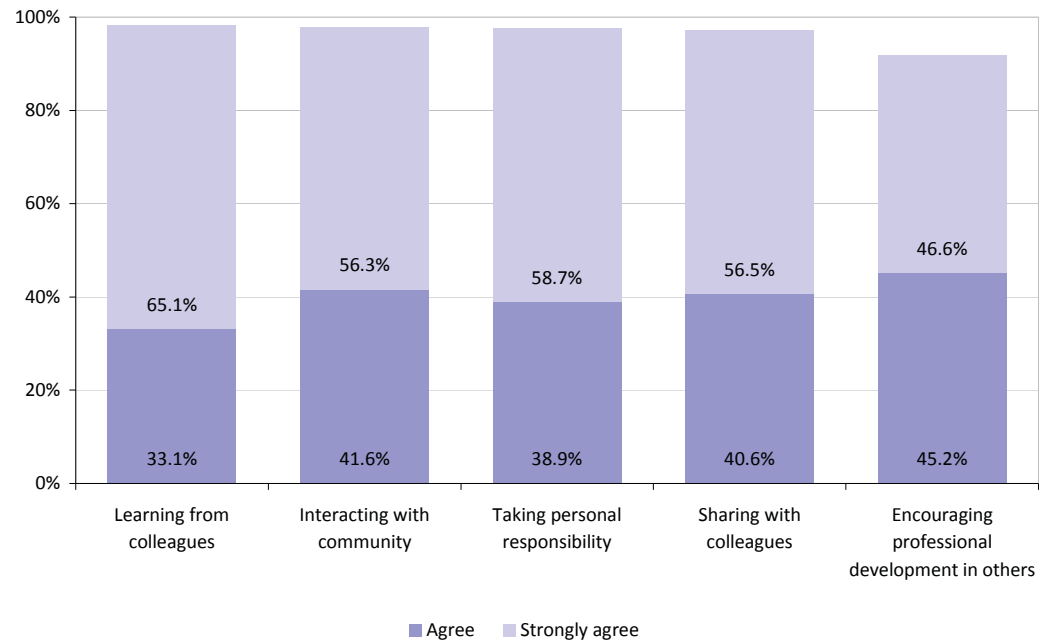
Question

How important is participating in the transfusion community to your professional development?

Response

The vast majority of MLTs agree or strongly agree that participation in the transfusion community is important to professional development, especially to learn from their colleagues (98%).

Figure 17. Proportion of MLTs who agree or strongly agree that participating in the transfusion community is important to their professional development



How do MLTs participate in the transfusion community?



Relationships in communities are built on norms of reciprocity and trustworthiness. From these relationships individuals can build and mobilize key competencies such as communication, teamwork and leadership skills.

I believe it is very important for all health care professionals, particularly those involved in transfusion, to get outside of their 4 walls....It makes me a better technologist and improves my perspective for improvements in patient care.

-A respondent

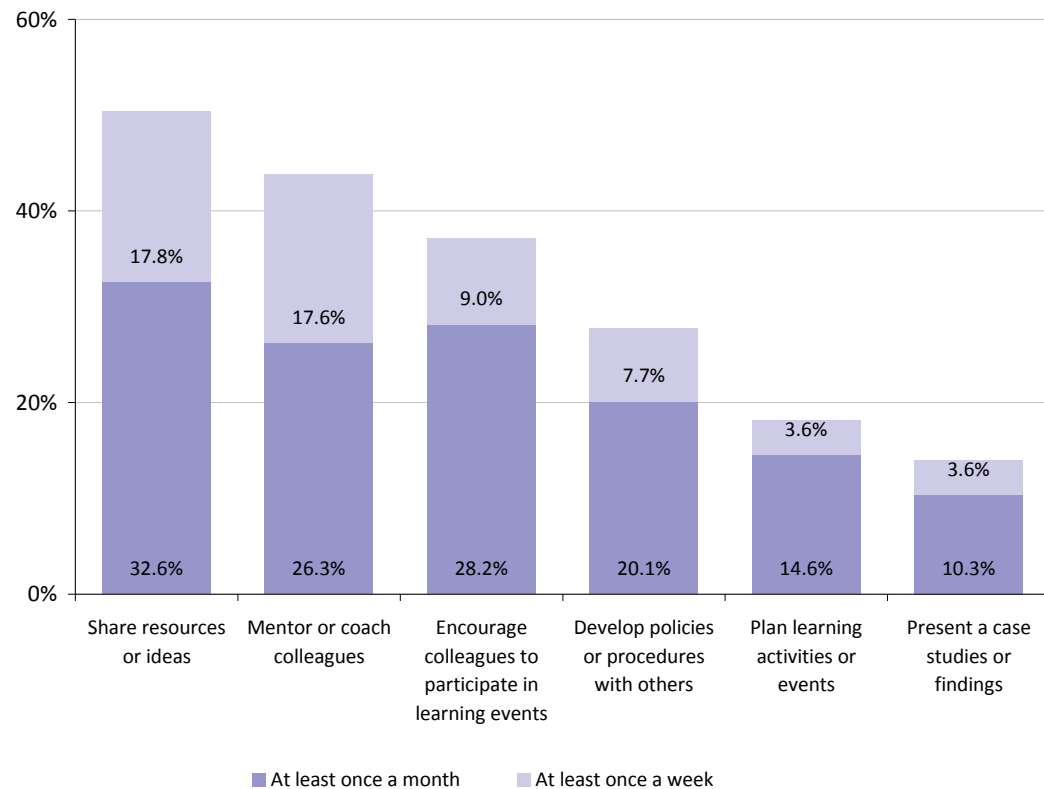
Question

How do MLTs participate in the transfusion community?

Response

MLTs are strong participants in the transfusion community. The most common activity is a simple sharing of resources or ideas (83%). A majority of MLTs also mentor or coach their colleagues (75%), encourage them to participate in learning events (70%), and jointly developing policies and procedures (59%).

Figure 18. Proportion of MLTs who share their expertise with their colleagues



With whom do MLTs interact?



We can (and do) select the right textbook and structured learning program that prescribes what MLTs should do to improve practice. We can also provide MLTs opportunities for collaborative inquiry so that they are able to develop and share a body of wisdom gleaned from their own experience.

I would like to know how others are dealing with the problems that I find intractable.

-A respondent

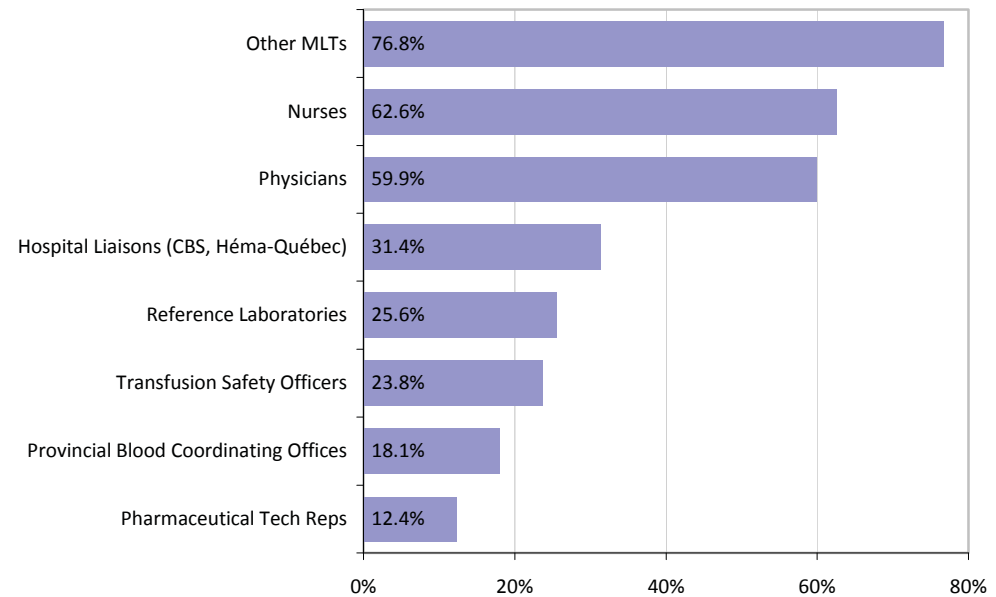
Question

With whom do MLTs interact in a professional capacity within the transfusion community?

Response

MLTs are active networkers, particularly with other MLTs (77%) and nurses (63%), and to a lesser extent with physicians (60%). Hospital Liaisons are especially adept networkers with MLTs, given their small numbers within the transfusion community.

Figure 19. Proportion of MLTs who interact with colleagues in a professional capacity within the last six months



How does participation differ for

MLTs on the bench?

MLTs on the bench have significantly fewer opportunities to share their experience and expertise.

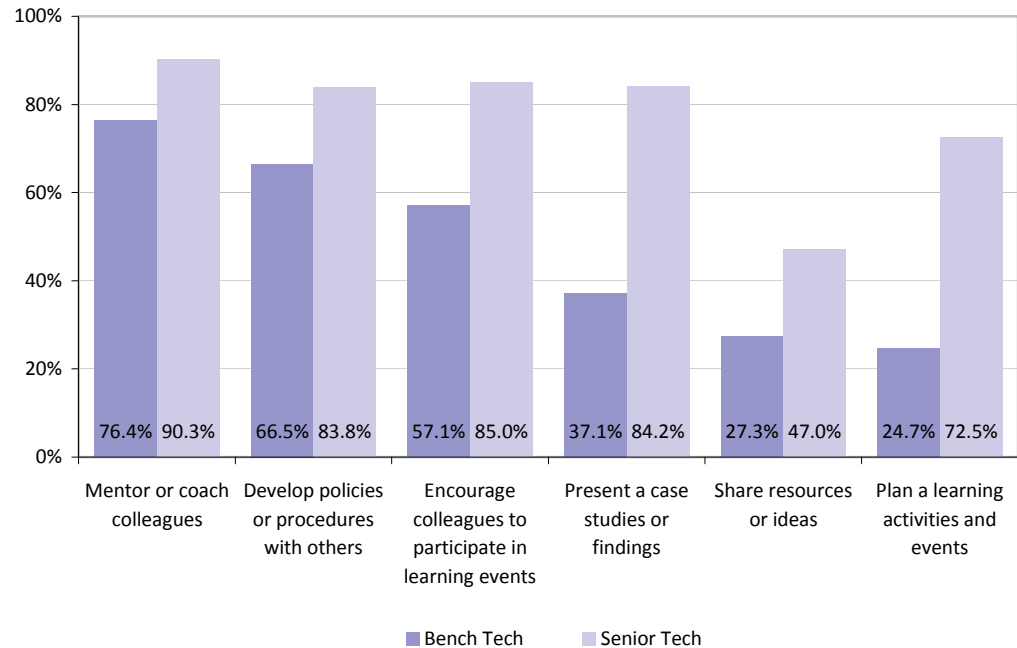
Continuing education is important, however, if... [you have no opportunity] to utilize the knowledge gained, what is the point of learning it? [There must be] respect for knowledge, skills or experience [gained].

- A respondent

Participation in the transfusion community

MLTs on the bench have significantly fewer opportunities to share expertise with their colleagues. In fact, senior technologists are twice as likely to share resources and present case studies, and three times as likely to be involved in planning learning events.

Figure 20. Proportion of MLTs who share their transfusion-related expertise with their colleagues at least once a month, by professional role



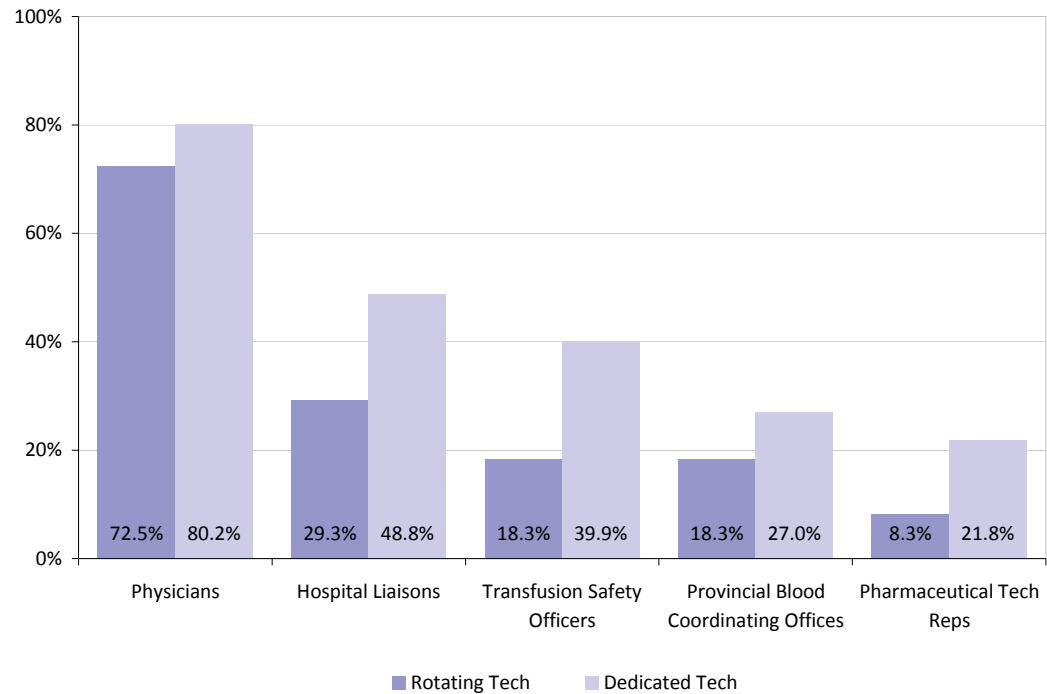
How does participation differ for MLTs who rotate through other labs?

MLTs who rotate through other laboratories interact far less in the transfusion community than their colleagues who work exclusively in Transfusion Science.

Participation in the transfusion community

Workers who divide their time among various medical laboratory specialties have far fewer opportunities to interact with some members of the transfusion community, particularly with expertise-rich networks such as Hospital Liaisons, Transfusion Safety Officers and Provincial Blood Coordinating Offices.

Figure 21. Proportion of MLTs who interact with colleagues in a professional capacity within the last six months, by amount of time spent in Transfusion Science laboratory



Endnotes

¹ This survey is indebted to the deluge of continuing education surveys that MLTs keep on their hard drives, and in particular these recent surveys that cover similar territory: 1) Institut national de santé publique du Québec (2006). *Analyse des résultats de l'enquête sur les besoins de formation continue des chargés de sécurité transfusionnelle et des technologistes médicaux en banque de sang*; 2) The Canadian Council on Learning annual surveys of Canadian attitudes towards learning, from 2006 to 2008 available online at <http://www.ccl-cca.ca/CCL/Reports/SCAL/SCALHome/>; and 3) Nursing Health Services Research Unit (2009). *Phase 2: Strengthening the quality of community health nursing practice: A pan-Canadian survey of community health nurses' continuing education needs*, available online at <http://www.nhsru.com/documents/Series%2017%20PHASE%202%20STRENGTHENING%20THE%20QUALITY%20OF.pdf>.

² Davis, K. H. (2002). Medical Laboratory Technologists national human resources review – 2002 update. Nation-wide alert! *Canadian Journal of Medical Laboratory Science*. Available online at http://csmls.org/images/csmls/Publications_and_Research/Research/2002review-eng.pdf

³ On terminology: Classifying learning can be difficult and confusing and should only be undertaken when absolutely necessary. In this report, generic terms like education and training are used interchangeably. So, *continuing education* and *continuing training* both refer to those learning opportunities that are taken up after the end of full-time initial preparatory education. However, we distinguish between *structured* and *informal learning* because it is relevant to MLTs' participation in continuing education. But this distinction is not without its grey areas. For example, when MLTs refer to continuing education, they typically mean *structured learning* because many (but not all) MLTs must track and submit continuing education credits to maintain their licence. However, the Organization for Economic Cooperation and Development (OECD) classifies continuing education differently (i.e., *nonformal learning*) because it exists outside the mainstream systems of education and training and does not always lead to formalized certificates. In this report, we adopt the MLTs' view of structured learning: any learning activity that is organized.

⁴ D.W. Livingstone describes informal learning as the submerged part of the adult learning iceberg: unseen, but essential to supporting the visible part. Many employers are unaware of the value-added informal learning brings. Furthermore, they often assume that such knowledge is part of the employee's general competency rather than a result of intentional informal learning. See: D. W. Livingstone (2000). *Exploring the icebergs of adult learning: Findings of the first Canadian survey of informal learning practices*. Toronto: Ontario Institute for Studies in Education, University of Toronto. Available online at <http://www.oise.utoronto.ca/depts/sese/csew/nall/res/cjsaem.pdf>

⁵ Cited in: Canadian Council on Learning (2009). *2008 Survey of Canadian attitudes toward learning: Results for learning throughout the lifespan*. Available online at <http://www.ccl-cca.ca/CCL/Reports/SCAL/2008Archive/>

⁶ See: Canadian Society for Medical Laboratory Science (2005). *Competency profile: General Medical Laboratory Technologist*, which lists the competencies expected of an entry-level general MLT and which differs from earlier versions in that it views the MLT as having an influential role on the health care team beyond laboratory testing. Competency profiles are available online at <http://www.csmls.org/en/certification/competency-profiles.html>

⁷ Unfortunately, we did not receive enough survey responses from part-time MLTs to further explore their unique perspectives on continuing education.

⁸ The OECD recommendations cited in: Canadian Council on Learning (2008). *State of learning in Canada: Toward a learning future, Report on learning in Canada 2008*. Available online at http://www.ccl-cca.ca/pdfs/SOLR/2008/SOLR_08_English_final.pdf