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**Assessing the Impact of Labour Market Information on Career Decision-Making**

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**Assessing the Impact of Labour Market Information:  
Final Report on Results of Phase Two (Field Tests)**

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## Executive Summary

This research project was designed to address two questions: (a) To what extent is independent self-help a sufficient process in order for clients to use LMI effectively? and (b) To what extent does assistance by a service provider enhance the effective use of LMI? Supplementary research questions included: (a) To what extent is LMI an equally effective intervention for clients with career decision-making needs and clients with job search needs, and (b) What demographic factors (e.g., age, gender, job history, etc.) have a differential influence on the effectiveness of a LMI intervention? All questions were addressed in a context where client needs were assessed to determine whether LMI for career decision making or LMI for job search would be an appropriate intervention to address the client needs and LMI packages were developed to address each of those needs (one LMI package tailored to career decision making and a second LMI package tailored to job search). In both cases, the LMI packages contained lists of possible resources, instructions for accessing the information, and tips for interpreting and applying the information to a client's personal situation. Clients remained in the program for 3 weeks. Thus, this project isolated the use of LMI as a viable approach, independent of other interventions such as psychoeducational workshops or career counselling.

To evaluate the effectiveness of the interventions used in this study, and the impact of those changes on the lives of the research participants, we used the evaluation framework developed by the Canadian Research Working Group on Evidence-based Practice in Career Development (CRWG) (see Baudouin et al., 2007). The CRWG framework incorporates a simple Input → Process → Outcome approach to evaluating the impact of career services on clients. Inputs are the resources that are available to help clients change (i.e., pursue the outcomes). Processes are the mechanisms that are involved in achieving the outcomes. Outcomes are the changes in service recipients (clients), i.e., the results of the inputs enacting the processes. The three elements can be thought of as related in a linear way, but the relationship is not strictly linear. Inputs feed processes. Processes result in outcomes. BUT outcomes are also influenced by the inputs (resources) available. Furthermore, the nature of the inputs (especially the competencies of the staff) influence the process (interventions) that can be enacted. Thus, even though the framework may depict a linear relationship pictorially, in reality, the three elements are very interactive.

A participant-research (sometimes referred to as action research) approach was adopted for this study (cf. Buerk, 1998; Hossack, 1997; Johnson & Button, 1998). The service providers were career and employment counsellors, working in their usual career services centres, with clients who were part of their typical client case-loads. In Phase 1 of this project a series of interviews was conducted to obtain (among other things) a snapshot of current practices for identifying clients for whom LMI would be a suitable intervention and obtaining a list of most commonly used sources of LMI. The results of the snapshot interviews were used to create a standard Initial Employability Assessment protocol to identify clients who had needs pertaining to either Career Decision-Making or Job Search.

The dependent measures used in this study came from researcher developed questionnaires, indexed to the expected outcomes of the intervention, and utilizing procedures developed by the CRWG (See CRWG, 2009). The process began by examining the promising practices identified in Phase One of the project, augmented by the knowledge of the research team. Then, adhering to the parameters surrounding the planned intervention [Only LMI (not used in combination with any other interventions such as career counselling), used either independently or with minimal assistance], the outcomes that could be legitimately expected to occur were identified, which then became the outcome objectives of the interventions. Questionnaires were then developed to assess the extent to which the outcomes were achieved. The intervention outcomes could be

mapped onto a 14 item questionnaire where the items fell into three categories: Changes in client knowledge about LMI, changes in client skills for using LMI, and changes in client personal attributes that might result from participation in the interventions. All items were answered on a 5-point scale ranging from 0 to 4, utilizing the decision-making approach developed by members of the CRWG.

At a descriptive level, the results of this study show that clients in all treatment conditions experienced substantial positive change during the course of the intervention. Client self-assessments indicated that 45% of the clients reported that their competence in understanding and using LMI was inadequate before participating in the study, compared to 5% after they had completed the intervention. Saying the same thing from the other side of the coin, 55% of the clients indicated that their competence in understanding and using LMI was OK before participating in this research, compared to 95% of clients after participating in this research. The amount of change was similar across all three dimensions of the survey: Knowledge, skills, and personal attributes all demonstrated about the same degree of change.

Of particular note were items that suggested increased ability to self-manage careers, such as:

- A clear understanding of what I need to do to move forward in my career;
- Knowledge of print and online resources that help me to research career/employment options;
- A clear vision of what I want in my career future;
- The ability to access career resources that can help me implement my career vision;
- Confidence in my ability to manage future career transitions;
- Confidence in my ability to research career, employment, and training options that are available.

The statistical analysis of the data was consistent with the descriptive results. Looking at the whole set of statistical analyses, in most cases the amount of client change was statistically significant ( $p < .01$ ) and at a clinical level, scores on the assessment instruments after the intervention finished were twice as high as scores before the intervention began. Thus, the increases experienced by participants in this study were clinically meaningful as well as statistically significant. Moreover, 80% of clients attributed the changes they experienced as resulting from participation in the program and not other factors operating in their lives. At the end of the program 35% of the participants were employed (compared to 23% before the program began) and two-thirds of those had a job that was a good fit with their preferred employment future. Of those who had not yet found employment, 65% reported that they felt sufficiently prepared to continue using the knowledge and skills they had developed through participating in the program and did not feel the need to follow up with individual or group assistance.

Overall, the answer to both primary research questions is yes:

- LMI that is tailored to meeting a specific set of client needs and used in an independent self-help fashion is sufficient to promote statistically significant and clinically important client change and assistance by service providers enhances many of the client outcomes;
- All of the intervention-delivery combinations in this study produced significant change in general ability to access and use LMI, knowledge about how to use LMI, skills for using LMI and taking action on the information that was accessed, and personal attributes, such as optimism about one's career future, and confidence in one's ability to manage future career transitions;

- There was a 50% increase in the number of people who were working at the end of the study, compared to the beginning, and the number of people who thought their job was a good fit for them increased by a factor of four;
- Assisted self-help tended to produce greater change than independent use especially in the skills that clients acquired, the positive personal attributes that were cultivated, and the general ability to access and use LMI;
- The changes in employment status were similar for both independent and assisted groups.

We (members of the research team) believe that the overall process used in this research had a large role to play in the positive gain that clients experienced as a result of participating in the project. The role of a structured client needs assessment interview process was essential. In this study, the initial assessment successfully identified clients who would be suitable for the interventions that were developed. In order for interventions to be successful, it is important to make sure that the intervention is appropriate for addressing the needs that prompted a client to seek assistance. Often, agencies develop programs that they think will be appropriate for the clients they serve and then clients are forced into the existing programs that an agency offers. We think that the reverse order is more appropriate, i.e., that client needs are first of all identified, and then programs are developed to address the needs that clients express. The data in this study support this latter contention. The process used in this research identified the resources that were designed to address two frequently occurring categories of client need. Then interventions were developed keeping in mind the kind of client characteristics and client needs that the intervention was intended to address and the sorts of client outcomes that could be expected to occur as a result of the intervention. Next, an assessment protocol was developed to identify clients who would be suitable for the intervention, and appropriate procedures were developed to track the extent to which the intervention was implemented as intended and the degree to which clients were engaged in the intervention process. The client outcomes could then be assessed in a manner that made it possible to link the client changes to the intervention process.

This is one of the first studies that makes it possible to demonstrate a clear link between the processes that service providers and clients engage in and the outcomes that clients experience.

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## **Assessing the Impact of Labour Market Information: Results of Phase Two**

This project can best be conceptualized as a program evaluation that has implications on the impact of Labour Market Information (LMI) on career decision-making and job search behaviour and also on the way that program evaluation can be approached in the field. The project has three Phases. Phase One resulted in a State of Practice Snapshot of the current use of LMI in employment offices across the country. In Phase Two there was a comparison of two ways of delivering LMI to clients: a typical independent self-help process for accessing LMI, and an assisted self-help process for accessing LMI. Both delivery methods were used with adult clients who had job search or career decision-making needs. Phase Three involved a detailed exploration of the nature of the client's experience in using LMI through a semi-structured telephone interview with a subset of the participants from both treatment conditions. The interview focused on the ways in which participants accessed and used LMI, focusing on the details of the client experience related to processing the LMI they accessed. This report is focused on the results of Phase Two of the project.

### **Research Questions**

This research project was designed to address two related questions:

If client needs are assessed and clients are given LMI tailored to meet their needs,

1. to what extent is independent self-help a sufficient process in order for clients to use LMI effectively?
2. to what extent does assistance by a service provider enhance their effective use of LMI?

Several sub-questions also were addressed:

- What demographic factors (e.g., age, gender, job history, etc.) have a differential influence on the effectiveness of a LMI intervention?
- For clients with job-search and decision-making needs, what type of assistance in finding and using LMI leads to what kinds of outcomes?
- How do clients process the LMI information they access and how do clients use that information to create a plan for action?

This project isolated the use of LMI as a viable approach, independent of other interventions such as psychoeducational workshops or career counselling

### **Conceptual and Methodological Foundations of the Study**

In this study we experimented with some innovative evaluation procedures to examine the efficacy of the interventions and delivery methods we used. Therefore, to help readers understand the procedures we used, the rationale for using those procedures, and the empirical support for using those procedures, we provide a summary of the underlying philosophical and procedural foundations for our approach.

#### **Methodology**

A participant-research (sometimes referred to as action research) approach was adopted for this study (cf. Buerk, 1998; Hossack, 1997; Johnson & Button, 1998). The service providers were career and employment counsellors, working in their usual career services centres, with clients who were part of their typical client case loads. The project began with a series of snapshot interviews (Phase 1), in order to get an idea of the types of LMI resources that service

providers found most useful, the way that service providers determined that LMI would be an appropriate intervention for a client, and the way that services providers typically interacted with clients who were using LMI as their primary intervention (See Hiebert, et al., 2010). This permitted the research development team to use existing practices as a cornerstone of the interventions that were developed. The results of the snapshot interviews were used to create a standard Initial Employability Assessment protocol to identify clients who had needs pertaining to either Career Decision-Making or Job Search, which were the two areas of client need that were being addressed in this research. The commonly used LMI resources, augmented by resources identified by the research team, were used to develop the LMI intervention packages used in the study.

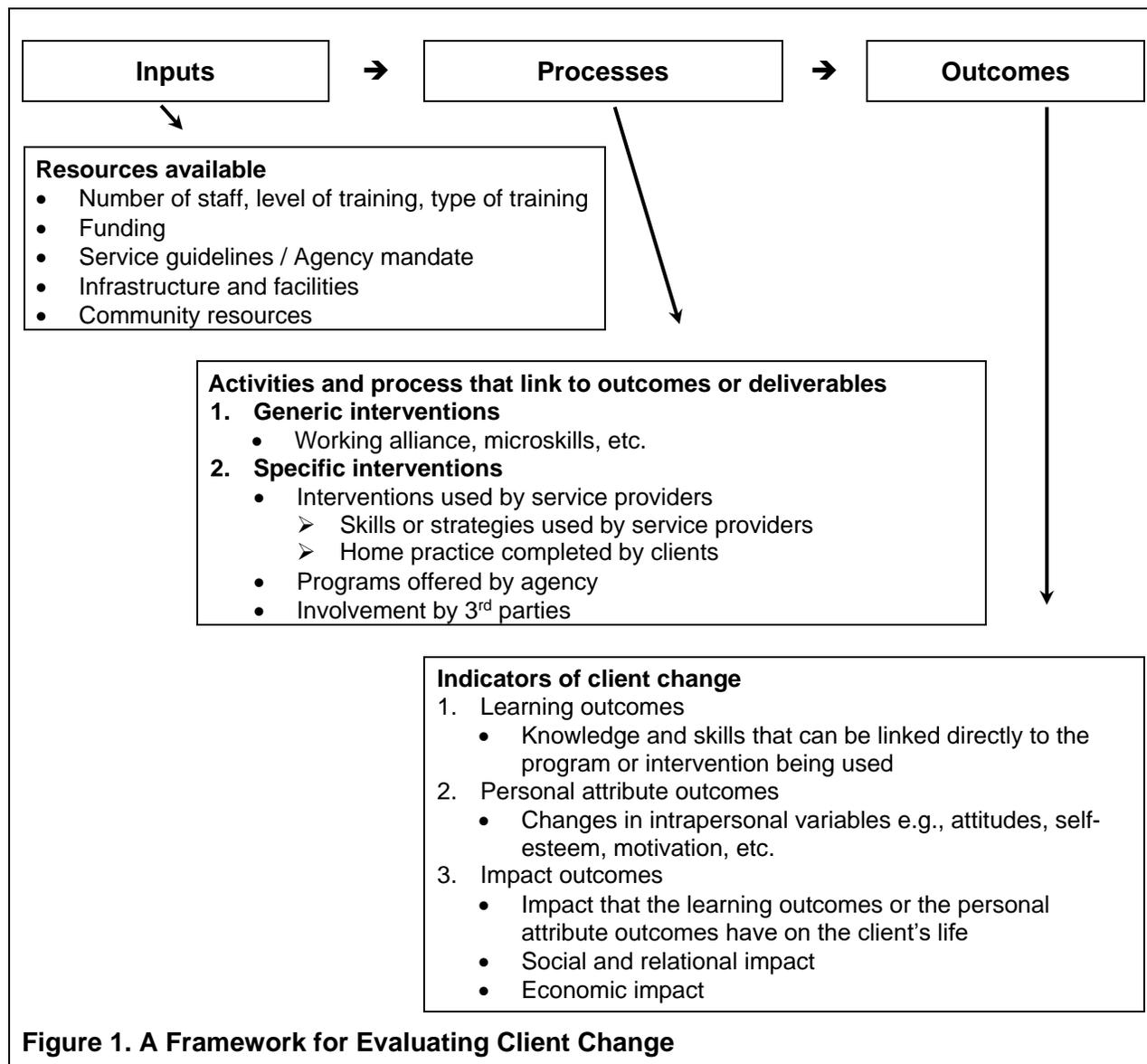
We used the approach described above in the hope that, if the results of the research were positive, there would be a good chance that the procedures would be incorporated into the normal daily practices of service providers, since the procedures reflected typical procedures already used in the field. It has been widely acknowledged for some time (e.g., Franks, Wilson, Kendall, & Brownell, 1982) that research findings are not widely incorporated into the day-by-day functioning of practitioners, likely because practitioners do not find the experimental methodology to be useful or applicable. One potential solution to this problem is to adopt an experimental methodology that closely matches the way business is normally done in the field. Thus, we chose a participant research approach as the guiding methodology for our project.

### ***Evaluation Framework***

In this study, the framework for evaluating client change developed by the Canadian Research Working Group on Evidence-based Practice in Career Development (CRWG) was used as a guide to demonstrating client change resulting from accessing and using LMI. The CRWG framework adopts a simple Inputs → Processes → Outcomes approach to evaluating the impact of career services on clients and was designed to be simple enough that practitioners in the field would use it, yet comprehensive enough to cover the most important factors influencing client change. The decision was made to focus on client change rather than other indicators of quality service delivery because client change has been central to the challenge issued by policy makers, namely “You have not yet made the case for the effectiveness of career services.” The framework has been described extensively elsewhere (e.g., Baudouin, et al., 2007; Lalande, Hiebert, & Bezanson, 2005; Lalande, Hiebert, Magnusson, Bezanson, & Borgen, 2006) and summarized briefly below. See Figure 1.

In the CRWG framework, the term **outcome** is defined specifically to refer to client change and the main focus is on client changes that can be linked directly to the interventions or programs in which a client participated. **Outcomes** include what clients learn (e.g., the knowledge and skills that clients acquire, in this case knowledge about accessing and using LMI and skills for processing LMI), the personal attributes they develop (e.g., self-confidence, optimism about their career future), and the impact of those factors on clients’ lives (e.g., change in employment status, having a plan for follow-up action, accessing further assistance). **Processes** are the activities that counsellors and clients engage in that are intended to produce the outcomes. Processes can be thought of as interventions or programs. In this study the interventions were the LMI packages and the processes for accessing and processing LMI included in the LMI packages, plus the protocols for the advice sessions that were part of the assisted delivery condition. Process tracking forms were developed to determine the extent to which clients engaged in the intervention and the degree to which the counsellors followed the intended game plan in their interactions with clients. **Inputs** are the resources that are needed to enact the processes that produce the outcomes. In this study the resources included: the LMI packages, the initial service needs assessment interview protocol, the survey instruments, the tracking forms, the initial briefing sessions regarding roles and procedures in the research project, the

time counsellors spent interacting with research participants, and the time managers spent coordinating the activities at their agency. The three elements can be thought of as related in a linear way, but the relationship is not strictly linear. Inputs feed processes. Processes result in outcomes. BUT outcomes are also influenced by the inputs (resources) available. AND the nature of the inputs, especially the competencies of the staff, influence the process (interventions) that can be enacted. Thus, even though the framework may depict a linear relationship pictorially, in reality, the three elements are very interactive.



### **Research Design**

A 3 dimensional factorial design was used in this study, incorporating two types of intervention (career decision-making or job search), two delivery conditions (independent self-help or assisted self-help), and two levels of time (before the intervention or after the intervention). Participants were assigned to an intervention condition in a purposeful way, as described below, and within each intervention were randomly assigned to either the independent or assisted delivery condition.

## ***Intervention***

In this project, much care went into the design and construction of the intervention packages to make sure that LMI was isolated as the active ingredient intended to result in client change. The information gained from the snapshot interviews, coupled with the expertise of the research team, were used to create intervention packages that contained lists of favourite (=most useful) LMI resources, tips for accessing those resources, guidelines for making sense of the information, and suggestions for how to roll the information into a plan for future action. In this way, the intervention was not only information, but also tips on how to make the information meaningful to the lives of the clients who participated in the study.

In the assisted delivery condition, clients received two 20-30 minute advice sessions, designed to make sure that they were finding the resources they needed and were processing the information correctly. A protocol for the advice sessions was developed to make sure that service providers did not overstep the boundary into counselling. This was important in making sure that we were tapping the effects of LMI per se, and not LMI embedded in other more robust interventions.

## ***Sample Selection Process***

Selection of research participants was done in a deliberate manner. Clients who came to the career services centres seeking assistance were given an Initial Employability Assessment, according to the regular practice in those centres. Clients who were identified as having needs in the areas of job search or career decision-making were given the opportunity to participate in the research. The nature of the research was explained to these clients, along with a description of the expectations for participants, the commitments of the service providers, and requirements for receiving a \$100 honorarium for participation. Clients who volunteered to participate, signed informed consent forms, and were randomly assigned to either the independent or assisted delivery condition and deliberately assigned to the intervention condition that was consistent with their identified need. The initial Employability Assessment Interview provided a consistent starting point for clients and service providers, and it made sure that clients were receiving an intervention that was appropriate for the needs they expressed. Horan (1980) makes an important point when elaborating on the appropriate treatment myth: If clients receive an intervention that is not closely aligned with their needs, it is unreasonable to expect that the intervention will be successful. Instead, steps must be taken to ensure that the intervention offered is appropriate for the client needs that initiated the request for assistance. In the current research project, the initial Employability Assessment Interview confirmed that each client was placed in an appropriate intervention group (career decision-making or job search). After clients were matched to the appropriate intervention, they were placed on an alternating basis into either the Independent Self-Help or the Assisted Self Help delivery condition.

## ***Other Relevant Methodological Considerations***

The nature of this study did not permit using a non-treatment control group and it was not sensible to incorporate random assignment to intervention condition. *Regarding the lack of a non-treatment control group*, we maintain that in order to provide a valid comparison, a no treatment control group would need to have a similar composition to the treatment group. In order to ensure that, it would be necessary to conduct the Initial Employability Assessment with all potential research participants and then assign some of them to a no treatment, or a delayed treatment, condition. This is an important point for it makes little sense to compare people in a job search treatment condition with people who did not have job search needs, e.g., comparing people in a job search treatment with people who had skill training needs and were receiving no treatment aimed at addressing those needs. Thus the Initial Employability Assessment would need to be used as a starting point, before assigning people to a treatment group of a non-

treatment group. Clients would rightly expect that following the initial assessment, they would receive some help. To find out that they had been placed in a non-treatment, or a delayed treatment group would violate that expectation. Stating as part of the informed consent process that there was a possibility of being placed in a non-treatment (or even a delayed treatment) condition would create a substantial bias in the types of clients who agreed to participate in the study. Furthermore, given that the potential clients in this study would be unemployed or looking to change jobs, in the minds of those clients, the situation could be approaching crisis proportions (Amundson & Borgen, 1995; Borgen, 1999; Borgen & Amundson, 1984, 1987). To place them in a no treatment condition would be pressing the boundary of acceptable ethical behaviour for practitioners. Thus, the decision was made to conduct the study without a non-treatment condition.

*The rationale for not using random assignment to treatment condition* is similar to the rationale described in the preceding paragraph. The main objective of this project was not to find out who would benefit from job search treatments or career decision-making interventions, but to test the effects of an intervention for individuals who were identified as needing a particular intervention. Thus the study is not about randomly selecting and assigning people to interventions, but rather investigating the conditions under which an intervention will be effective. From our perspective, it is not sensible to randomly assign participants to treatment condition, because a fundamental requirement when providing services is that the service delivered matches the needs for which a client is seeking assistance. For example, if a person with career decision-making needs is randomly assigned to a job search intervention group, we would not expect that intervention to be successful because it is not designed to meet the needs of the client seeking assistance. In actual practice in the field, clients are seldom (likely never) assigned randomly to a particular set of services. Instead, there typically is an initial employability assessment to determine the types of service that will meet a client's needs, and then those services are made available to the client. Thus, clients were assigned to a treatment condition based on their identified needs. Within each treatment condition, clients were assigned randomly to either an independent self-help or an assisted self-help delivery condition.

When doing field research pertaining to integration into the labour market, it is important to keep in mind that being unemployed is not a chronic state for most clients seeking assistance, and further, when people become unemployed they view it as an acute situation that needs to be resolved as soon as possible. Most practitioners would view it as being unethical to do an initial assessment and then have a person wait for treatment to begin. In order for a comparison group to be truly a no treatment condition, it would be necessary for participants to agree that they would not engage in any job search or career decision making behaviour during the waiting period. It would be necessary to monitor the extent to which no treatment participants did in fact adhere to this condition to avoid them becoming a defacto independent self-help group. Thus in this research we did not use a no treatment control condition and there was no random assignment to intervention. However, it was possible to utilize random assignment to delivery method, and that was done by alternating participant assignment to delivery condition. In theory, this should have resulted in equal numbers of clients in each delivery condition. However the description of the sample in the next section of this report indicates that the numbers are not equal. There are two primary reasons for this. First, there were differential drop-out rates in the two delivery conditions and the time constraints for the study did not permit the additional time it would take to recruit additional clients to make the number in the two delivery conditions equal. Secondly, a small number of clients (2-3 clients) who were initially assigned to the assisted self-help delivery condition were not able to meet with their counsellors for the assisted interviews. These clients were permitted to stay in the study but were assigned to the independent self-help condition because that is the delivery condition that they completed. We could have elected to treat those 2-3 clients as drop-outs because they did not complete the treatment condition to

which they were assigned, but we elected to let them remain in the study as independent self-help clients because operationally, that is the delivery condition that they experienced.

Some readers may question the methodology used in this study because it does not constitute a randomized controlled trial (RCT). In response, we point out that RCTs are only one approach among many for establishing a causal link between intervention and outcome. Other procedures exist that have strong theoretical and empirical support for demonstrating a predictable link between intervention and outcome. For example in the field of Applied Behaviour Analysis (see Sulzer-Azaroff & Mayer, 1991) a treatment withdrawal condition (often referred to as an A-B-A or an A-B-A-B design) is used to demonstrate cause and effect. After a suitable baseline to identify the typical level of a behaviour (condition A) and intervention is implemented (condition B), changes in the behaviour under examination are monitored. If change occurs, the treatment is withdrawn (second condition A) to see if the behaviour returns to its pre-intervention level; if so, the treatment usually is re-introduced (second condition B) and steps are taken to promote maintenance. This process typically is replicated in different settings in order to determine whether the pattern seems to be consistent with similar clients, in different settings, working with different practitioners. Another procedure also developed in Applied Behaviour Analysis is multiple baselines across clients, across settings, or across time. In these procedures, all clients follow a similar process beginning with establishing a baseline, then beginning intervention. Typically, the start times for clients are different so that the baseline period serves as a no treatment condition for clients who already have begun the intervention. Multiple baselines across time are an effective way of controlling for time-tied effects. A causal link between intervention and outcome is established if the pattern of change is similar for all clients, regardless of the time they began intervention (See Hersen & Barlow, 1976; Rimm & Masters, 1974). To the extent that the purpose of empirical methods is to increase confidence in the predictability of outcomes resulting from an intervention, perhaps the strongest evidence comes from Traditional Chinese Medicine, where it is common knowledge that there are centuries of replication across thousands of clients all demonstrating a consistent pattern of connecting interventions and outcomes. In such replications we have careful documentation of client symptoms, careful and detailed documentation of intervention procedures, and careful documentation of outcomes. Most people would take such replications as providing evidence of a causal link between intervention and outcome, and as a suitable basis for predicting treatment outcome, especially when they have occurred across centuries of practice with thousands of clients.

Astute readers will note that the references in the preceding paragraph are quite old. This indicates that the research support for the procedure we used in this project is not new. These approaches have been in operation for several decades, continue to be used in recent research (see Harvey, May, & Kennedy, 2004; McEwen, Polatajko, Huijbregts, & Ryan, 2010) and have amassed a sizable amount of support and a consistent track record for demonstrating empirical support for the effectiveness of interventions (see Christ, 2007). While there may be some people who believe that the only acceptable way of demonstrating treatment effectiveness is through RCTs, we adopt a different, and we believe a more open-minded position. We raise the matter in this report to point out that there are many ways to demonstrate treatment effectiveness. RCTs are one way, but there are other ways as well. None of these procedures are without limitations and there are problems associated with using RCTs (see Barlow, 1980; Franks et al., 1982; Hiebert, Domene, & Buchanan, In Press; Horan, 1980) as well as with the other procedures we have summarized above. There also are advantages associated with using each of these procedures. Our purpose in raising this matter is not to convince readers that any one procedure is superior to the rest: It is only to emphasize that there are many acceptable approaches, each with substantial support.

## Dependent Measures

The dependent measures used in this study came from researcher developed questionnaires, indexed to the expected outcomes of the intervention and utilizing procedures developed by the CRWG (See CRWG, 2009). The process began by examining the promising practices identified in Phase One of the project, augmented by the knowledge of the research team. Then, adhering to the parameters surrounding the planned intervention [Only LMI (not used in combination with any other interventions such as career counselling), used either independently or with minimal assistance], the outcomes that could be legitimately expected to occur were identified, which then became the objectives of the interventions. Questionnaires were then developed to assess the extent to which the outcomes were achieved; one questionnaire for outcomes common to both interventions, and separate questionnaires for outcomes that were unique to each intervention. The outcomes common to both interventions could be mapped onto a 14 item questionnaire where the items fell nicely into three categories: Changes in client knowledge about LMI, changes in client skills for using LMI, and changes in client personal attributes that might result from participation in the interventions. All items were answered on a 5-point scale ranging from 0 to 4, utilizing the decision-making approach described in the next section. The resulting four dependent measures are summarized in Figure 1 below.

### Figure 2. Dependent measures

#### Knowledge

- Q1 I have a clear understanding of what I need to do to move forward in my career.
- Q2 I have a clear vision of what I want in my career future.
- Q3 I have reviewed my past work, education and experience so that I know what skills and strengths I have.
- Q5 I have knowledge of print and online resources that help me to research career/employment options.

#### Skills

- Q4 I have a list of possible options that may fit with what I want in my career future.
- Q7 I have identified my career/employment-related goals and the next steps to get there.
- Q8 I have effective strategies for keeping myself motivated to achieve my career/employment goals.
- Q10 I have a realistic action plan (or schedule) summarizing the main career/employment-related activities I want to pursue and the processes I am engaging in.
- Q12 I am able to access resources that can help me implement my career/employment goals.

#### Personal Attributes

- Q6 I have confidence that career-related employment opportunities actually exist that fit with what I want in my career future.
- Q9 I have optimism about what lies ahead in terms of meeting my career goals.
- Q11 I have confidence in my ability to manage future career transitions.
- Q13 I am confident in my ability to research career, employment, and training options that are available.
- Q14 I am optimistic that I will obtain career-related work or training within the next 3-6 months.

**Total Score:** an overall measure of client change

We avoided using standardized measures because practitioners tell us that they almost never use standardized tests to assess client change. When practitioners do evaluate their work with

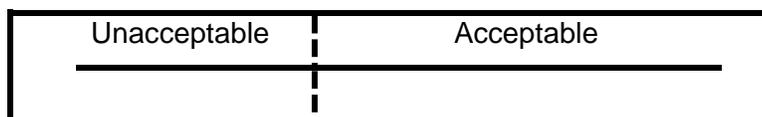
clients, they use informal procedures that they think are more relevant for identifying client change. (See Lalande & Magnusson, 2007; Magnusson & Lalande, 2005 for a review of the state of practices pertaining to evaluation.) Also, we did not use questions requiring a yes-no answers because the outcomes are complex enough that a yes-no answer is seldom adequate. Instead we used a retrospective assessment process developed by the CRWG and indexed to the outcome objectives of the interventions used in our experimental conditions. A brief description of the philosophy underlying our approach to evaluation is provided below. Readers wishing more details are referred to Baudouin et al. (2007) or the CRWG web site, <http://www.ccdf.ca/crwg/tools.html>.

### ***Evaluation as a Decision-Making Process***

Frequently, evaluation is approached from a judgmental perspective: An evaluator passes judgement with respect to the topic under examination. We have opted instead to approach evaluation from a decision-making perspective, where an evaluator examines the evidence and decides on the level of acceptability with respect to the topic under examination. Consider as an example the self-evaluations (or supervisor evaluations) of topics such as: knowledge, skill, level of competence, degree of preparation, degree of engagement, etc. In such situations, we have found it useful, and have found that we get high inter-rater agreement, as well as intra-rater agreement across time, when we use the decision-making approach described below. (In other words when several raters look at the same instance of performance, there is high agreement between different observers on what should be the appropriate rating. Furthermore, when the same rater looks at the same instance of performance on different occasions, there is high agreement on the rating from Time 1 and Time 2.)

Approaching evaluation as a decision-making endeavour involves a two-step process, where the first step pertains to the adequacy of the competency (adequate or not adequate) and the second step pertains to the level of competence within the first decision

**Step A, decide if the competency** (degree of preparation, level of engagement, level of knowledge, etc.) **is acceptable** (employable, adequate, etc.), **or unacceptable** (inadequate, unlikely to result in employment, etc.).



Then, in **Step B**, decide:

If the level of competence is unacceptable, is it:

- Really quite poor (= 0)

or

- Almost OK (= 1)

If the level of competence is acceptable, is it:

- Just barely OK (= 2) [but still acceptable, otherwise it would be 1]
- Really very good (= 4), or
- Somewhere in between (= 3) [better than minimally acceptable, but not yet excellent]

The resulting rating scale is presented below.



In guiding people through the decision-making process we use common language to describe the various steps, in the belief that using common language increases the relevance of the process, is easily understood by participants, and therefore increases the consistency of interpretation and reliability of participant responses.

### ***Retrospective Assessment***

We coupled the decision-making approach with a form of retrospective assessment which we have named *Post-Pre Assessment*. One difficulty with using self-assessments to determine changes in skill or knowledge resulting from career development interventions is that people don't know what they don't know. To illustrate, people taking a course on interpersonal communication might be asked to rate their communication skills at the beginning of the course and again at the end of the course. At the beginning many people think that their communication skills are reasonably good and they rate themselves quite high. During the course, as they get to know more about what constitutes good communication, they realize that their knowledge about interpersonal communication, as well as their skills for communicating effectively, are not as good as they initially thought. At the end of the course they are asked to rate themselves again, and often the ratings are lower than they were at the beginning, even though they have learned a lot and have acquired more adequate levels of skills. This is because their measuring stick has changed as they developed greater knowledge about interpersonal communication. Thus the post-test scores end up being lower than the pre-test scores, even though positive change has occurred. Although practitioners frequently report this phenomenon to us, and it has been reported previously in the literature (see Posavac, 2011; Robinson & Doueck, 1994; Spiro, Shalev, Solomon, & Kotler, 1989), we are not aware of formal data supporting this observation in the career development literature. Thus, we built into our methodology the opportunity to validate this observation. (See pp. 15-16 of this report.)

*Post-Pre Assessment* addresses this problem by creating a consistent measuring stick for both pre and post assessments. This process is used **ONLY** at the end of a course or program. It asks people to use their current level of knowledge to create a common measuring stick for pre-course and post-course assessments. For example, when a course (or workshop, or program, etc.) is finished participants can be asked to use their current frame of reference to assess their competence before and after the course (or workshop, or program, etc.). In the current study this was phrased as: ***Knowing what you know now about using labour market information for career decision making or job search, rate yourself before the research and rate yourself now.*** The self-assessment was done only at the end of the research (hence the name "post-pre assessment"), but it asked people to self-assess their competencies pre and post their participation in the research project, using the same measuring stick, i.e., "Knowing what you know now about using labour market information for career decision making or job search ..."

### ***Psychometric Properties of the Survey Instruments***

The surveys resulting from the process described above have a reasonable degree of psychometric support. The inter-item correlations and the item-total correlations indicate that grouping the items into the three subscales depicted in Figure 2 is supported. (See Tables 1 and 2.) Relevant cells are colour coded to facilitate interpretation. The items within each subscale are only moderately correlated (.60 or less), indicating that they are measuring different constructs. The correlations between each item and the total score of the subscale to which it belongs is greater than the correlation with the total score of the other two subscales, indicating that the item more appropriately belongs to the subscale to which it has been assigned than to either of the other two subscales. The correlation between the total scores for knowledge and skills is higher than the correlation between any other two subscales, which is to be expected, providing evidence that knowledge and skill are highly related but not identical.

Also of interest is the observation that the correlation between skill and personal attributes is higher than the correlation between knowledge and personal attributes, suggesting that skill level has a greater influence on affective variables than does knowledge.

Thus we are confident that the evaluation instruments used in this project provide sound support for the conclusions we make at the end of this report.

**Table 1. Initial Survey: Inter-Item and Item-Total Correlations (n = 169)**

Item	Q1	Q2	Q3	Q5	Knowl	Q4	Q7	Q8	Q10	Q12	Skill	Q6	Q9	Q11	Q13	Q14	Pers Attrib
Q1	1	.55	.37	.38	.79	.47	.52	.50	.51	.34	.62	.32	.24	.31	.30	.10	.35
Q2		1	.29	.30	.74	.39	.55	.35	.55	.16	.56	.31	.33	.30	.24	.22	.39
Q3			1	.39	.68	.34	.36	.35	.37	.19	.46	.18	.24	.24	.29	.08	.28
Q5				1	.72	.31	.43	.33	.38	.43	.49	.17	.19	.22	.40	.17	.31
Total-Knowledge					1	.51	.65	.51	.63	.40	.72	.33	.35	.37	.42	.20	.46
Q4						1	.47	.39	.47	.30	.70	.32	.19	.30	.36	.16	.37
Q7							1	.52	.60	.35	.79	.41	.31	.36	.30	.22	.45
Q8								1	.53	.46	.77	.26	.47	.48	.50	.27	.55
Q10									1	.39	.81	.36	.44	.39	.34	.23	.50
Q12										1	.64	.37	.38	.50	.69	.25	.60
Total-Skill											1	.46	.47	.52	.57	.28	.64
Q6												1	.45	.35	.28	.34	.68
Q9													1	.54	.42	.45	.80
Q11														1	.52	.32	.76
Q13															1	.27	.67
Q14																1	.69
Total-Personal Attributes																	1

Knowledge items are highlighted in green. Skill items are highlighted in blue. Personal attribute items are highlighted in purple.

- All the correlations are statistically significant ( $p < .01$ ).
- The intercorrelations between items are moderate (.60 or less), suggesting that the items are measuring different constructs.
- All of the items correlate more highly with the total score of the subscale to which they belong, than with either of the other two subscale scores.
- The correlation between total-knowledge and total-skill (.72) is higher than the correlation between total-knowledge and total-personal attributes (.46) or total-skill and total-personal attributes (.64).
- The correlation between skill and personal attributes is higher than the correlation between knowledge and personal attributes, suggesting that skills have a greater influence on affective variables than does knowledge.

**Table 2. Final Survey – Before: Inter-Item and Item-Total Correlations (n=154)**

Item	Q1	Q2	Q3	Q5	Knowl	Q4	Q7	Q8	Q10	Q12	Skill	Q6	Q9	Q11	Q13	Q14	Pers Attrib
Q1	1	.61	.41	.49	.80	.59	.64	.46	.55	.44	.67	.47	.52	.33	.53	.46	.56
Q2		1	.49	.42	.82	.62	.66	.43	.65	.47	.72	.50	.57	.42	.49	.45	.59
Q3			1	.46	.75	.45	.54	.38	.44	.40	.55	.39	.40	.31	.40	.39	.45
Q5				1	.75	.46	.53	.48	.45	.61	.63	.42	.47	.48	.51	.47	.56
Total-Knowledge					1	.68	.76	.56	.68	.61	.82	.57	.63	.50	.62	.57	.69
Q4						1	.64	.49	.58	.42	.78	.58	.59	.38	.56	.54	.63
Q7							1	.51	.63	.52	.82	.56	.61	.48	.51	.58	.66
QQ8								1	.66	.53	.79	.57	.67	.51	.55	.62	.70
Q10									1	.57	.86	.55	.70	.52	.66	.63	.73
Q12										1	.76	.45	.52	.54	.63	.49	.63
Total-Skill											1	.67	.77	.61	.73	.71	.83
Q6												1	.72	.55	.52	.67	.83
Q9													1	.62	.61	.66	.87
Q11														1	.56	.61	.80
Q13															1	.65	.80
Q14																1	.86
Total-Personal Attributes																	1

Knowledge items are highlighted in green. Skill items are highlighted in blue. Personal attribute items are highlighted in purple.

- All the correlations are statistically significant ( $p < .01$ ).
- The intercorrelations between items are moderate (.60 or less), suggesting that the items are measuring different constructs.
- For the before measures, all of the items correlate more highly with the total score of the subscale to which they belong, than with either of the other two subscale scores.
- The correlation between total-knowledge and total-skill (.82) is higher than the correlation between total-knowledge and personal attributes and knowledge (.69) and about the same as total-skill and personal attributes (.83).
- The correlation between skill and personal attributes is higher than the correlation between knowledge and personal attributes, suggesting that skills have a greater influence on affective variables than does knowledge.

## Sample

Field testing of the interventions developed in this study took place in 8 employment centres in two provinces, Saskatchewan and New Brunswick. There were 169 participants who began the study, of which 13 discontinued participation and 5 submitted incomplete data where one or more of the survey forms was missing. In the end, complete data were obtained from 151 participants. Demographic information was gathered using the questionnaire presented in Annex A.

Looking at the sample as a whole, there were 74 males and 77 females. Regarding Canadian residency, 149 participants indicated that they were Canadian citizens or landed immigrants (and therefore legally entitled to work in Canada). Most of the participants (n=118) had not previously participated in employment services programs. At the beginning of the study, 115 participants were not employed, 22 were working part-time and 13 were working full time. Of those who were working full or part-time, 6 said their work was a good fit for them, 11 said it was an OK fit for them, and 18 said it was a poor fit for them. The age of participants ranged from 19 to 62 years, with a mean age of 44 years. The age distribution is provided in Table 3.

**Table 3. Age distribution of 151 participants.**

Age range	≤ 25	26-30	31-35	36-40	41-45	46-50	≥51
n	27	18	24	24	16	18	22

It is difficult to determine the precise educational level of participants because the data suggest that participants experienced some confusion when responding to this question. We can say with confidence that the majority of participants (90%) had a high school diploma and about two-thirds of them had some form of formal post-secondary education or training. Practitioners in this research indicated that the education level of the participants in this research was typical of the clients they usually saw.

**Table 4. Education Level of 151 participants.**

Education Level	Yes	No
Less than a High School Graduation Certificate	17	134
High School Graduation Certificate	101	50
Trade or Technical Certification	32	119
College Diploma	36	115
University Bachelor degree	30	121
University graduate degree	4	147
Other (please specify)	29	122

Participants had a varied employment history. In the past 5 years, 30 of them had been in 5 or more jobs, 22 had been in 4 jobs, 25 were in 3 jobs, 46 were in 2 jobs, and only 24 had been in the same job for the past 5 years. Furthermore, in the past 5 years, 15 had been unemployed for 36-60 months, 15 had been unemployed for 18-30 months, 15 had been unemployed for 12-16 months, 19 had been unemployed for 6-11 months, 26 had been unemployed for 1-5 months and 42 had not been unemployed over the past 5 years.

The study was conceptualized initially as a 2-by-2 factorial study comparing 2 methods of delivering LMI to clients (independent use vs. assisted use) having 2 different types of career development needs (career decision-making vs. job search). The distribution of participants across the intervention conditions is provided in Table 5.

**Table 5. Distribution of 151 participants grouped according to client need and intervention type.**

		Delivery		Total
		Independent	Assisted	
Intervention Type	Career Decision Making	48	30	78
	Job Search	35	38	73
Total		83	68	151

The participants in this project came from a wide variety of employment backgrounds and had a varied employment history, as is depicted in Table 6.

**Table 6. Type of Employment Background of 150 participants.**

(Note. One participant did not indicate their employment background.)

Type of Work	Intervention				Totals
	Career Decision Making		Job Search		
	Independent	Assisted	Independent	Assisted	
Accounting/Finance	3	0	0	3	6
Admin/Clerical	1	3	3	4	11
Customer Service	7	4	4	4	19
Engineering/Technology	1	1	2	5	9
General Labour	3	2	3	2	10
Health Care/Social Services	1	1	2	2	6
Hospitality	2	0	1	2	5
Retail	6	6	3	5	20
Sales and Marketing	8	1	1	1	11
Skilled Labour	11	10	12	6	39
Other	5	2	3	4	14
<b>Total</b>	<b>48</b>	<b>30</b>	<b>34</b>	<b>38</b>	<b>150</b>

The distribution of participants in the two provinces is provided in Table 7.

**Table 7. Distribution of 151 participants grouped according to province, client need, and intervention type.**

Province	Intervention Type	Delivery		Total
		Independent	Assisted	
Saskatchewan	Career Decision Making	20	15	35
	Job Search	23	25	48
	Province Total	43	40	<b>83</b>
New Brunswick	Career Decision Making	28	15	43
	Job Search	12	13	25
	Province Total	40	28	<b>68</b>

Most of the participants were not employed at the beginning of the study, as is depicted in Table 8.

**Table 8. Employment status of 151 participants grouped according to province.**

(Note. One participant did not indicate their employment status.)

		Current Employment Status			Total
		Part-Time Work	Full-Time Work	Not Currently Employed	
Province	Saskatchewan	13	4	65	<b>82</b>
	New Brunswick	9	9	50	<b>68</b>
Total		<b>22</b>	<b>13</b>	<b>115</b>	<b>150</b>

Of the 35 people who were employed full or part time, 6 said that their work was a good fit for them, 11 said it was an OK fit, and 18 said that their work was a poor fit for them.

One of the questions of interest in this study pertained to potential gender difference in the effectiveness of the interventions, therefore the distribution of participants grouped by gender within province is provided in Table 9.

**Table 9. Distribution of 151 participants grouped according to gender, province, client need, and intervention type.**

		Intervention				Totals
		Career Decision Making		Job Search		
Gender	Province	Independent	Assisted	Independent	Assisted	
Male	Saskatchewan	8	7	15	12	42
	New Brunswick	13	9	5	5	32
	Total-Male	21	16	20	17	<b>74</b>
Female	Saskatchewan	12	8	8	13	41
	New Brunswick	15	6	7	8	36
	Total-Female	27	14	15	21	<b>77</b>
<b>Column Totals</b>		<b>48</b>	<b>30</b>	<b>35</b>	<b>38</b>	<b>151</b>

## Results

### Self-assessment Accuracy

The explanation of the post-pre assessment method provided earlier indicated that at pre-test people often tend to over-estimate their level of competence because they do not have an accurate understanding of the situation they are trying to master. This makes sense to us, but it has not been submitted to an empirical test in the career development field. Therefore, this project provided an opportunity to test this hypothesis, even though it was not part of the formal research agenda. We indicated earlier that the dependent measures in this project came from researcher-developed questionnaires that were indexed to the client outcomes that could legitimately be expected to result from the interventions. The items listed in Figure 2 were used in two survey instruments: an Initial Survey that served as a pretest (See Annex B), and a Final Survey that incorporated the Post-Pre methodology described above (See Annex C). Thus it was possible to compare the Pre-test scores with the Final Survey-Before scores to determine the similarity between client initial assessments of their competencies and their assessments based on the new learning they had acquired as a result of participating in the research project. In addition, the Final Survey asked participants to self-assess some competencies that were specifically related to the intervention they received (i.e., because the interventions were geared toward meeting the needs of clients, the interventions contained some elements that were not

common to both Job Search and Career Decision Making). The final survey also asked participants to indicate their employment status, their progress with enacting an action plan, and their attributions for any changes they experienced while the project was running.

To explore the accuracy of participant self-assessments, we compared the *Initial Survey* (pre-test) responses to the *Final Survey-Before* responses. We found major differences between the results of these two measures. First, we examined the nature of participant responses, keeping in mind that the scale had 14 items where a rating of 2 indicated minimally acceptable, and a rating of 4 indicated excellence. Then we conducted a statistical analysis comparing the responses on the two scales to see if any differences were statistically significant. From the informal comparisons we observed the following:

- For the Initial Survey administered before the interventions began (pre-test)
  - 28 people had a total score of less than 28 (14 items with a rating of 2 would yield 28)
  - 70 people had a total score of 28-41 (average rating of 2 or more but less than 3)
  - 46 people had a total score of 42 or more (average rating of 3 or more but less than 4)
- For the Final survey-Before (Knowing what you know now, how would you rate yourself before participation in this project)
  - 91 people had a total score of less than 28 (14 items with a rating of 2 would yield 28)
  - 48 people had a total score of 28-41 (average rating of 2 or more but less than 3)
  - 7 people had a total score of 42 or more (average rating of 3 or more but less than 4)

Two-tailed correlated *t*-tests on the scores for the *Initial Survey* and the *Final Survey-Before* indicated that the differences between the two sets of scores were significantly different.

**Table 10. Comparison of Pre-test Scores with Participant Post-Pre Assessment of Their Before Intervention Competence.**

Scale	Assessment Instrument		<i>t</i>	<i>p</i>
	Initial Survey	Final Survey-Before		
Total Score	36.64 (9.92)	23.66 (11.27)	15.61	<.01
Knowledge Subscale	9.61 (3.48)	6.82 (3.41)	10.57	<.01
Skill Subscale	12.23 (4.34)	7.92 (4.29)	12.46	<.01
Personal Attributes Subscale	14.81 (3.73)	8.79 (4.42)	17.42	<.01

Based on the above findings, we decided to use the Post-Pre assessments of before intervention competence as the comparison point for determining intervention effectiveness. **[NOTE.** For those who might take exception to our decision to use the results of the Post-Pre responses in the Final Survey as our main data source, we also did a statistical analysis comparing the Initial Survey (pre-test) responses to the Final Survey-After responses. Those analyses produced identical conclusions, although the mean differences were somewhat smaller because of the inflated value of the pre-test scores. Summary tables for those analyses are included in Annex D.]

## Data Aggregation

The demographic information presented earlier indicates that the composition of the sample was quite similar in both provinces. However, to determine whether it was reasonable to combine the data for both provinces it was important to determine whether participant scores on the dependent measures would support that action. To test the similarity of participant scores in the two provinces a series of independent *t*-tests were conducted, using the total score before intervention as the dependent measure and comparing the two provinces for each of the intervention conditions. The results indicated that there were no significant differences in the total scores of participants. See Table 11 below. This suggests that it is permissible to combine the data from both provinces, thus permitting greater power for the ensuing analyses and also permitting us to conduct more exploratory analyses investigating potential differences between subsets of our sample.

**Table 11. Comparison of Before Intervention Total Scores of Participants in Two Provinces.**

Intervention	Province	n	Mean	SD	df	t	p
Career Decision Making-Independent	Saskatchewan	20	16.80	9.64	44	1.64	.12
	New Brunswick	26	21.69	10.27			
Career Decision Making-Assisted	Saskatchewan	14	19.00	11.89	28	.21	.84
	New Brunswick	16	18.19	9.45			
Job Search-Independent	Saskatchewan	23	26.57	10.67	33	.66	.51
	New Brunswick	12	28.92	8.46			
Job Search-Assisted	Saskatchewan	25	30.24	11.49	36	1.01	.32
	New Brunswick	13	26.54	8.95			

## Intervention Effectiveness

A descriptive look at the responses to the Final Survey provide a compelling illustration of the effectiveness of the interventions (see Table 12). Looking at the 14 items in the survey instrument, between 30% and 58% of the respondents indicated that before the program their level of competence on that item was not OK, compared to 1% – 9% after the program. All of the mean scores on the Before Program responses were in the Not OK range, with 1 exception which had a mean score of 2.05, compared to After Program scores where all of the mean responses were greater than minimally OK (mean score 3 or greater) with 2 exceptions where the mean scores were 2.91 and 2.96.

Considering that there were 151 participants and 14 items in the questionnaire, 2114 responses were possible. However, some participants did not answer all of the questions, leaving us with 2108 as the total number of responses. The results provided in Table 12 provide more details about the substantial changes reported by the sample as a whole.

- 946 (45%) of the responses BEFORE participating in this research were not OK (0 or 1). In contrast, 95 (5%) of the responses AFTER participating in this research were not OK. (The change is depicted in the yellow and green areas in Table 12.)
- Saying the same thing from the other side of the coin, 1162 (55%) of the responses BEFORE participating in this research were OK (2 or 3 or 4). In contrast, 2013 (95%) of the responses AFTER participating in this research were OK.
- 108 (5%) of the responses BEFORE participating in this research were Exceptional (4). In contrast, 825 (39%) of the responses AFTER participating in this research were Exceptional. (The change is depicted in the orange and blue areas in Table 12.)

- The amount of change was similar across all three dimensions of the survey: knowledge, skills, and personal attributes all demonstrated about the same degree of change.
- Of particular note are items that suggest increased ability to self-manage their careers in the areas of career decision-making or job search, such as:
  - A clear understanding of what I need to do to move forward in my career.
  - A clear vision of what I want in my career future.
  - Knowledge of print and online resources that help me to research career/employment options.
  - The ability to access career resources that can help me implement my career vision.
  - Effective strategies for keeping myself motivated to achieve my career/employment goals.
  - A realistic action plan (or schedule) summarizing the main career/employment-related activities I want to pursue and the processes I am engaging in.
  - Confidence in my ability to manage future career transitions.
  - Confidence in my ability to research career, employment, and training options that are available.

Details are provided in Table 12 on the next page.

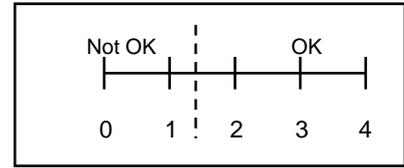
**Table 12. Response Frequencies of Post-Pre Self-Assessments**

In responding to the questions, please use a two-step process.

**(A)** decide on whether the statement was/is **adequate (OK)** or **not adequate (Not OK)**, then

**(B)** assign the appropriate rating:

- (0) unacceptable,
- (1) not really acceptable, but almost OK,
- (2) adequate, but just barely (still OK otherwise it would be 0 or 1),
- (4) exceptional, and
- (3) somewhere between minimally OK and exceptional.



Graphically, the scale looks like this: \* \* \* \* \*

Regarding the Primary Objectives, and knowing what you know now, how would you rate yourself before the workshop, and how would you rate yourself now?	Before					After					Ave	
	Not OK	OK	Not OK	OK	Ave	Not OK	OK	Not OK	OK	Ave		
1. A clear understanding of what I need to do to move forward in my career	21	57	48	16	9	1.57	1	3	28	66	53	3.11
2. A clear vision of what I want in my career future	24	37	40	39	11	1.84	1	7	29	63	51	3.03
3. Reviewed my past work, education and experience so I know what strengths and skills I have	11	33	57	35	14	2.05	2	3	21	68	56	3.15
4. A list of possible career options that I want in my career future	23	49	47	23	9	1.64	1	4	25	66	54	3.12
5. Knowledge of print and online resources that help me to research career/employment options	32	55	42	16	5	1.38	1	1	21	53	74	3.32
6. Confidence that career-related employment opportunities actually exist that fit with what I want in my career future	19	41	58	25	8	1.75	1	10	27	58	55	3.03
7. Identified my career/employment-related goals and the next steps to get there	27	50	46	22	6	1.54	2	7	20	68	54	3.09
8. Effective strategies for keeping myself motivated to achieve my career/employment goals	24	45	52	23	7	1.63	2	7	34	60	48	2.96
9. Optimism about what lies ahead in terms of meeting my career goals	23	48	46	28	6	1.64	0	7	29	54	61	3.12
10. A realistic action plan (or schedule) summarizing the main career/employment-related activities I want to pursue and the processes I am engaging in	33	48	44	24	2	1.43	3	5	45	48	50	2.91
11. Confidence in your ability to manage future career transitions.	15	39	57	29	11	1.88	1	7	22	63	58	3.13
12. The ability to access career resources that can help me implement my career vision.	24	40	53	25	5	1.64	1	3	10	66	68	3.33
13. Confidence in my ability to research career, employment, and training options that are available	15	44	52	34	6	1.81	1	1	13	58	78	3.40
14. Optimism that I will obtain career-related work or training within the next 3-6 months	20	49	47	26	9	1.70	3	10	24	49	65	3.08
<b>Column Totals</b>	311	635	689	365	108		20	75	348	840	825	

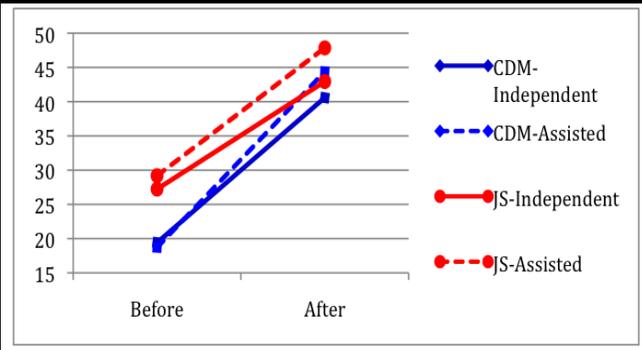
In addition to the descriptive analyses discussed above, a series of inferential analyses were conducted using a 3 factor ANOVAs for repeated measures [2 (intervention: Career Decision Making or Job Search) by 2 (Delivery mode: Independent or Assisted) by 2 (Time: Before or After the program)], using the Before and After ratings from the Final survey as the data source (See Annex C). The inferential analyses permitted us to determine whether the differences described above were statistically significant, thereby providing additional evidence about the effectiveness of the interventions and delivery modes. They also provided an opportunity to examine differential treatment effects between various subsets of our sample, permitting us to comment, for example, whether the intervention condition or the delivery method were equally effective for males and females, older participants compared to younger participants, etc.

Initially, an analysis was conducted using the Total Score as the dependent measure. This was followed by an analysis of the subscale scores to determine the changes in knowledge, skills, and personal attributes across time. Where numbers permitted a follow-up four factor ANOVA was conducted using various subsets of the sample as an additional classification variable. The results of these analyses are presented below, along with a summary of the meaning derived from the analyses. Note that the number of participants varies across the analyses because some participants did not answer all of the questions on either pre-test or post-test.

**Table 13. Comparison of Before and After Mean Total Scores for Two Interventions and Two Delivery Modes.**

	FSBefore (Pre-test)						FSAfter (posttest)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	45	19.42 (10.26)	29	18.72 (10.62)	74	19.15 (10.34)	45	40.58 (11.14)	29	44.38 (7.79)	74	42.07 (10.08)
Job Search	34	27.23 (10.02)	37	29.19 (10.78)	71	28.25 (10.39)	34	42.94 (8.93)	37	47.84 (5.46)	71	45.49 (7.68)
Total	79	22.78 (10.82)	66	24.59 (11.85)	145	23.61 (11.29)	79	41.59 (10.25)	66	46.32 (6.76)	145	43.74 (9.12)

Effect	F	p
Main effect for Time	498.71	<.01
Main effect for Intervention	20.20	<.01
Main effect for Delivery	3.45	.07
Intervention-by-Time interaction	11.74	<.01
Delivery-by-Time interaction	4.19	.04
Intervention-by-Delivery interaction	.49	.49
Intervention-by-Delivery-by-Time interaction	.18	.67



**Summary**

- For the group as a whole, participants experienced a significant increase their overall ability to use LMI. The significant main effect for time indicates that for the sample as a whole, the after-intervention scores are significantly higher than the before-intervention scores.
- Participants in both the CDM and the JS groups reported significant gains (comparing pre-test to posttest scores) and the change for participants in the CDM group was significantly larger than the change in the JS group. Generally speaking, participants in the JS group had higher scores than participants in the CDM group, possibly indicating that JS participants were more familiar with using LMI before the project began.
- Although the main effect for delivery mode was not significant, the significant delivery-by-time interaction indicates that participants receiving assistance demonstrated greater change across time than did those in the independent mode.
- The non-significant intervention-by-delivery interaction, coupled with the non-significant 3-way interaction indicates that neither intervention was more conducive to one manner of delivery compared to the other, i.e., it is **not** the case that one intervention is a better candidate for independent (or assisted) delivery.
- NOTE. The numbers in the vertical axis in the above graph represent the scores on the scale being reported. For the total score, the maximum score is  $14 \times 4 = 56$  and a score of less than 28 ( $2 \times 14 = 28$ ) is considered to represent an unacceptable level.

**Table 14. Comparison of Before and After Mean Knowledge Subscale Scores for Two Interventions and Two Delivery Modes.**

	FSBefore (Pre-test)						FSAfter (posttest)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	47	5.23 (2.077)	30	5.33 (2.83)	77	5.27 (2.78)	47	11.74 (2.87)	30	12.50 (2.52)	77	12.03 (2.75)
Job Search	34	8.65 (3.46)	38	8.26 (3.05)	72	8.44 (3.23)	34	12.82 (2.53)	38	13.50 (1.80)	72	13.18 (2.18)
Total	81	6.67 (3.50)	68	6.97 (3.28)	149	6.81 (3.39)	81	12.20 (2.77)	68	13.06 (2.18)	149	12.59 (2.55)

Effect	F	p
Main effect for Time	543.28	<.01
Main effect for Intervention	29.64	<.01
Main effect for Delivery	.55	.46
Intervention-by-Time interaction	18.53	<.01
Delivery-by-Time interaction	3.00	.09
Intervention-by-Delivery interaction	.13	.72
Intervention-by-Delivery-by-Time interaction	.17	.68

The graph displays four data series: CDM-Independent (solid blue line with diamond markers), CDM-Assisted (dashed blue line with diamond markers), JS-Independent (solid red line with circle markers), and JS-Assisted (dashed red line with circle markers). The X-axis has two points: 'Before' and 'After'. The Y-axis ranges from 2 to 16. All series show a positive slope. The JS-Assisted series starts at approximately 8.5 and ends at 13.5. The JS-Independent series starts at approximately 8.5 and ends at 13.0. The CDM-Assisted series starts at approximately 5.5 and ends at 12.0. The CDM-Independent series starts at approximately 5.5 and ends at 11.5.

### Summary

- For the group as a whole, participants experienced a significant increase their knowledge about how to use LMI. The significant main effect for time indicates that for the sample as a whole, the after-intervention scores are significantly higher than the before-intervention scores.
- Participants in both the CDM and the JS groups reported a significant gains (comparing pre-test to posttest scores) and the change for participants in the CDM group was significantly larger than the change in the JS group. Generally speaking, participants in the JS group had higher scores than participants in the CDM group, possibly indicating that JS participants were more familiar with using LMI before the project began.
- The non significant main effect for delivery, coupled with the non-significant delivery-by-time interaction means that participants in both delivery conditions experienced similar gains in knowledge about using LMI.
- The non-significant intervention-by-delivery interaction, coupled with the non-significant 3-way interaction indicates that neither intervention was more conducive to one manner of delivery compared to the other, i.e., it is **not** the case that one intervention is a better candidate for independent (or assisted) delivery.
- NOTE. The numbers in the vertical axis in the above graph represent the scores on the Knowledge subscale. There are 4 items so the maximum score is  $4 \times 4 = 16$  and a score of less than  $2 \times 4 = 8$  is considered to represent an unacceptable level.

**Table 15. Comparison of Before and After Mean Skill Subscale Scores for Two Interventions and Two Delivery Modes.**

	FSBefore (Pre-test)						FSAfter (posttest)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	46	6.70 (4.11)	29	5.93 (4.46)	75	6.40 (4.23)	46	14.30 (4.22)	29	15.55 (3.13)	75	14.79 (3.86)
Job Search	34	9.35 (3.52)	37	9.73 (4.01)	71	9.55 (3.76)	34	15.21 (3.45)	37	16.84 (2.32)	71	16.06 (3.01)
Total	80	7.83 (4.07)	66	8.06 (4.59)	146	7.93 (4.30)	80	14.69 (3.91)	66	16.27 (2.76)	146	15.40 (3.52)

Effect	F	p
Main effect for Time	466.70	<.01
Main effect for Intervention	147.21	<.01
Main effect for Delivery	1.43	.23
Intervention-by-Time interaction	9.33	<.01
Delivery-by-Time interaction	5.47	.02
Intervention-by-Delivery interaction	.54	.47
Intervention-by-Delivery-by-Time interaction	.29	.59

The graph displays mean scores on the Skill subscale (y-axis, 2 to 18) for four groups at two time points: 'Before' and 'After'. The groups are: CDM-Independent (solid blue line with diamond markers), CDM-Assisted (dashed blue line with diamond markers), JS-Independent (solid red line with circle markers), and JS-Assisted (dashed red line with circle markers). All groups show a significant increase in scores from 'Before' to 'After'. The JS-Assisted group consistently has the highest scores, while the CDM-Independent group has the lowest. The JS-Assisted group shows the largest gain, increasing from approximately 9.5 to 17.5. The CDM-Assisted group shows a gain from approximately 6.5 to 15.5. The JS-Independent group increases from approximately 6.5 to 15.5. The CDM-Independent group increases from approximately 6.5 to 14.5.

### Summary

- The significant main effect for time indicates that for the sample as a whole, the after-intervention scores are significantly higher than the before-intervention scores. For the group as a whole, participants experienced a significant increase in their skills for accessing and using LMI as well as skills for taking action in self-managing their careers.
- Participants in both the CDM and the JS groups reported a significant gains (comparing pre-test to posttest scores) and the change for participants in the CDM group was significantly larger than the change in the JS group. Generally speaking, participants in the JS group had higher scores than participants in the CDM group, possibly indicating that JS participants were more familiar with using LMI before the project began.
- Participants in the assisted delivery condition experienced greater increases in skill across time than did participants in the independent delivery condition.
- The non-significant intervention-by-delivery interaction, coupled with the non-significant 3-way interaction indicates that neither intervention was more conducive to one manner of delivery compared to the other, i.e., it is **not** the case that one intervention is a better candidate for independent (or assisted) delivery.
- NOTE. The numbers in the vertical axis in the above graph represent the scores on the Skill subscale. There are 5 items so the maximum score is  $5 \times 4 = 20$  and a score of less than  $2 \times 5 = 10$  is considered to represent an unacceptable level.

**Table 16. Comparison of Before and After Mean Personal Attributes Subscale Scores for Two Interventions and Two Delivery Modes.**

	FSBefore (Pre-test)						FSAfter (posttest)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	48	7.58 (4.24)	30	7.27 (4.39)	78	7.46 (4.28)	48	14.94 (4.56)	30	15.83 (3.40)	78	15.28 (4.16)
Job Search	35	9.29 (3.78)	38	11.05 (4.33)	73	10.21 (4.15)	35	14.91 (3.58)	38	17.50 (2.17)	73	16.26 (3.18)
Total	83	8.30 (4.12)	68	9.38 (4.73_)	151	8.79 (4.42)	83	14.93 (4.15)	68	16.76 (2.88)	151	15.76 (3.74)

Effect	F	p
Main effect for Time	365.86	<.01
Main effect for Intervention	11.18	<.01
Main effect for Delivery	5.35	.02
Intervention-by-Time interaction	6.90	.01
Delivery-by-Time interaction	1.93	.17
Intervention-by-Delivery interaction	3.13	.08
Intervention-by-Delivery-by-Time interaction	.07	.79

The graph displays the mean scores for four groups: CDM-Independent (solid blue line), CDM-Assisted (dashed blue line), JS-Independent (solid red line), and JS-Assisted (dashed red line). The Y-axis represents the score on the Personal Attributes subscale, ranging from 2 to 20. The X-axis shows the scores 'Before' and 'After' the intervention. All groups show a significant increase in scores from 'Before' to 'After'. The JS-Assisted group consistently has the highest scores, followed by CDM-Assisted, JS-Independent, and CDM-Independent.

### Summary

- The significant main effect for time indicates that for the sample as a whole, the after-intervention scores are significantly higher than the before-intervention scores. For the group as a whole, participants experienced a significant increase in affective variables pertaining to career self-management, such as optimism about their career futures and confidence in their ability to self-managed their careers.
- Participants in both the CDM and the JS groups reported a significant gains (comparing pre-test to posttest scores) and the change for participants in the CDM group was significantly larger than the change in the JS group. Generally speaking, participants in the JS group had higher scores than participants in the CDM group, however the gap was less pronounced at the end of the study.
- Participants in the assisted delivery condition reported more facilitative affective attributes than did their peers in the independent condition, but the change across time was about the same for both independent and assisted groups.
- The non-significant intervention-by-delivery interaction, coupled with the non-significant 3-way interaction indicates that neither intervention was more conducive to one manner of delivery compared to the other, i.e., it is **not** the case that one intervention is a better candidate for independent (or assisted) delivery.
- NOTE. The numbers in the vertical axis in the above graph represent the scores on the Personal Attributes subscale. There are 5 items so the maximum score is  $5 \times 4 = 20$  and a score of less than  $2 \times 5 = 10$  is considered to represent an unacceptable level.

## Supplementary Analyses

To explore whether other demographic factors may have had differential effects on the outcomes, several supplementary analyses were conducted, using the demographic factors crossed with the treatment conditions. In some cases, demographic factors were collapsed in order to obtain a large enough cell size in order to conduct the analysis; each of these instances is noted below. The results of the supplementary analyses that were conducted are reported below.

**Gender differences.** To explore whether men or women experienced differential results from participating in the various program combinations, a 4-factor ANOVA for repeated measures was conducted. The results are presented in Table 17.

**Table 17. Comparison of Before and After Mean Total Scores (and standard deviations) for Men and Women Receiving One of Two Interventions in One of Two Delivery Modes.**

Intervention	Delivery	Male			Female			Row Totals	
		n	Before	After	n	Before	After	n	
Career Decision Making	Independent	19	20.37 (11.42)	40.84 (10.61)	26	18.73 (9.49)	40.38 (11.71)	45	19.42 (10.26)
	Assisted	16	17.81 (9.45)	41.50 (8.32)	13	19.85 (12.21)	47.92 (5.53)	29	18.72 (10.62)
	Total	35	19.20 (10.50)	41.14 (9.50)	39	19.10 (10.33)	42.90 (10.62)	74	19.15 (10.33)
Job Search	Independent	20	28.65 (10.72)	42.15 (10.23)	14	25.21 (8.91)	44.07 (6.89)	34	27.24 (10.02)
	Assisted	16	28.44 (12.08)	46.06 (5.53)	21	29.76 (9.94)	49.19 (5.12)	37	29.19 (10.78)
	Total	36	28.56 (11.18)	43.89 (8.59)	35	27.94 (9.67)	47.14 (6.33)	71	28.25 (10.39)
Column Totals		71	23.94 (11.75)	42.54 (9.09)	74	23.28 (10.90)	44.91 (9.05)	145	23.61 (11.29)
<b>Effect</b>				<b>F</b>	<b>sig</b>	<b>Summary</b>			
Main effect for Time				492.87	<.01	<ul style="list-style-type: none"> <li>There were no significant differences between men and women regardless of the intervention they received or the mode of delivery for the intervention.</li> <li>The amount of change across time was similar for both men and women.</li> <li>Men and women responded equally well to the intervention and to the mode of delivery.</li> </ul>			
Main effect for Intervention				17.99	<.01				
Main effect for Delivery				3.42	.07				
Main effect for Gender				.73	.39				
Intervention-by-Time interaction				11.08	<.01				
Delivery-by-Time interaction				3.80	.05				
Gender-by-Time interaction				3.00	.09				
Intervention-by-Gender interaction				.10	.75				
Delivery-by-Gender interaction				2.31	.13				
Intervention-by-Delivery interaction				.37	.54				
Intervention-by-Delivery-by-Time interaction				.45	.50				
Intervention-by-Gender-by-Time interaction				.05	.83				
Delivery-by-Gender-by-Time interaction				.01	.96				
Intervention-by-Delivery-by-Gender interaction				.18	.67				

**Age.** In order to obtain a large enough cell size to conduct an analysis to determine whether age was a factor affecting the outcome, categories of age were created, as depicted in the chart below. The results of the analysis are provided in Table 18.

Age range	≤ 25	26-30	31-35	36-40	41-45	46-50	≥51
n	27	18	24	24	16	18	22

**Table 18. Comparison of Before and After Mean Total Scores (and standard deviations) for People in Different Age Groups Receiving One of Two Interventions in One of Two Delivery Modes.**

Age	Intervention																		Overall Total		
	CDM									JS											
	Independent			Assisted			Total			Independent			Assisted			Total					
	n	Before	After	n	Before	After	n	Before	After	n	Before	After	n	Before	After	n	Before	After	n	Before	After
≤ 25	10	20.30 (10.02)	47.90 (7.55)	5	18.80 (11.23)	48.20 (5.07)	15	19.80 (10.06)	48.00 (6.63)	3	13.67 (8.50)	47.33 (.58)	9	27.89 (8.77)	45.67 (6.34)	12	24.33 (10.51)	46.08 (5.47)	27	21.81 (10.32)	47.15 (6.11)
26-30	4	15.75 (8.06)	27.25 (17.02)	5	21.80 (13.63)	50.20 (6.22)	9	19.11 (11.29)	40.00 (16.56)	4	28.50 (8.54)	40.75 (7.14)	5	32.20 (4.97)	51.00 (3.81)	9	30.56 (6.60)	46.44 (7.45)	18	24.83 (10.73)	43.22 (12.89)
31-35	9	22.67 (12.37)	43.89 (12.33)	5	20.60 (7.50)	42.00 (8.40)	14	21.93 (10.61)	43.21 (10.78)	5	30.60 (8.68)	41.40 (9.32)	5	23.20 (8.07)	50.00 (4.74)	10	26.90 (8.81)	45.70 (8.31)	24	24.00 (10.01)	44.25 (9.71)
36-40	9	18.00 (6.95)	37.78 (9.77)	3	17.33 (8.33)	43.33 (12.50)	12	17.83 (6.91)	39.17 (10.21)	8	27.88 (10.02)	46.38 (6.21)	4	35.00 (16.45)	46.25 (6.70)	12	30.25 (12.25)	46.33 (6.07)	24	24.04 (11.61)	42.75 (8.99)
41-45	5	26.80 (7.85)	46.40 (9.13)	4	16.25 (8.02)	38.75 (7.27)	9	22.11 (9.27)	43.00 (8.82)	2	32.00 (5.66)	47.00 (11.31)	5	28.00 (12.85)	49.60 (4.28)	7	29.14 (10.92)	48.86 (5.93)	16	25.19 (10.32)	45.56 (8.03)
46-50	4	16.75 (14.91)	41.75 (4.35)	3	7.67 (7.09)	36.33 (13.43)	7	12.86 (12.31)	39.43 (8.83)	5	28.60 (7.23)	41.20 (10.62)	6	22.83 (13.95)	46.00 (5.62)	11	25.45 (11.28)	43.82 (8.20)	18	20.56 (12.97)	42.11 (8.48)
≥ 51	5	17.60 (10.60)	36.80 (8.11)	4	22.75 (16.42)	41.00 (8.60)	9	19.89 (12.83)	38.67 (8.09)	8	27.38 (12.22)	40.25 (11.95)	5	34.20 (8.35)	48.60 (4.39)	13	30.00 (11.06)	43.46 (10.37)	22	25.86 (12.59)	41.50 (9.61)
Total	46	20.02 (10.05)	41.43 (11.20)	29	18.52 (10.76)	43.45 (8.88)	75	19.44 (10.28)	42.21 (10.35)	35	27.34 (9.89)	43.00 (8.81)	39	28.62 (10.80)	47.90 (5.33)	74	28.01 (10.33)	45.58 (7.55)	149	23.70 (11.14)	43.89 (9.19)

Effect	F	sig	Summary
Main effect for Time	474.52	<.01	<ul style="list-style-type: none"> <li>The time, intervention, and intervention-by-time effects were similar to those already reported (which was to be expected).</li> <li>All age groups responded equally well to the intervention and to the mode of delivery.</li> <li>There was a significant age-by-time interaction effect (<math>p = .04</math>), indicating that the effectiveness varied for different ages groups across time.</li> <li>Follow up post hoc tests indicated that change across time for all age groups was statistically significant, but participants 25 years or younger and those ages 46-50 reported greater change than those 26-30, 36-40, and 51 years or older.</li> </ul>
Main effect for Intervention	23.42	<.01	
Main effect for Delivery	1.84	.18	
Main effect for Age	.72	.64	
Intervention-by-Time interaction	7.01	<.01	
Delivery-by-Time interaction	3.51	.06	
Age-by-Time interaction	2.35	.04	
Intervention-by-Age interaction	1.07	.39	
Delivery-by-Age interaction	2.08	.06	
Intervention-by-Delivery interaction	1.17	.28	
Intervention-by-Delivery-by-Time interaction	.23	.61	
Intervention-by-Age-by-Time interaction	.28	.95	
Delivery-by-Age-by-Time interaction	1.79	.08	
Intervention-by-Delivery-by-Age interaction	1.71	.08	

**Work history.** In order to obtain a large enough cell size to conduct an analysis to determine whether work history was a factor affecting the outcome, categories of work history were created, as depicted in the chart below.

Number of jobs in the past 5 years	1	2	3	4	5+
n	24	46	25	22	30

There were no significant differences between categories of work history or intervention type, or delivery mode. It appears that previous work history did not have a differential effect on treatment outcome across time.

**Unemployment history.** In order to obtain a large enough cell size to conduct an analysis to determine whether history of previous unemployment was a factor affecting the outcome, categories of unemployment history were created, as depicted in the chart below.

Unemployment history (Months of unemployment in the past 5 years)	0	1-5	6-11	12-16	18-30	36-50
n	42	26	19	15	15	15

There were no significant differences between categories of unemployment history or intervention type, or delivery mode. It appears that previous unemployment history did not have a differential effect on treatment outcome across time.

**Attribution for change.** Generally speaking, the program had a positive effect on the participants and the majority of participants attributed the changes they experienced to their participation in the program and not other factors operating in their lives. See Table 19.

**Table 19. Attribution for Change.**

To what extent would you say that any changes in the ratings on the previous pages are the result of your participation in this research project, and to what extent were they a function of other factors in your life?						
Program	Mostly Other Factors	Somewhat Other Factors	Uncertain	Somewhat This Project	Mostly This Project	n
CDM-Independent	0	2	5	14	26	20
CDM-Assisted	0	1	1	8	20	15
JS-Independent	3	0	6	14	12	23
JS-Assisted	0	0	3	11	22	23
<b>Total</b>	<b>3</b>	<b>3</b>	<b>15</b>	<b>47</b>	<b>80</b>	<b>148</b>

**Intervention-specific changes.** For each intervention there were some survey questions that were unique to that intervention, i.e., some of the Career Decision-Making questions were not relevant for the Job Search clients, and vice versa. Initially, these intervention-specific questions were intended to provide formative feedback that could be used to revise and improve future versions of the interventions. However, they also can be used to provide further indicators of client change. The results of the analyses of these intervention-specific questions provide additional indications of the efficacy of the interventions.

To analyze the intervention-specific questions, the response frequencies were first of all calculated (see Tables 20 and 21). Then the intervention-specific items were added to the

appropriate subscale (knowledge, skills, or personal attributes) and new subscale scores were calculated and analyzed (see Tables 22 and 23).

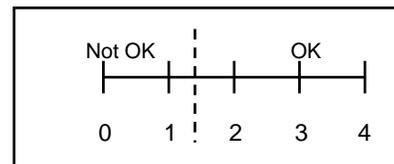
**Table 20. Response Frequencies of Post-Pre Self-Assessments of Intervention-Specific Survey Items Pertaining to Career Decision-Making.**

In responding to the questions, please use a two-step process.

(A) decide on whether the statement was/is **adequate (OK)** or **not adequate (Not OK)**, then

(B) assign the appropriate rating:

- (0) unacceptable,
- (1) not really acceptable, but almost OK,
- (2) adequate, but just barely (still OK otherwise it would be 0 or 1),
- (4) exceptional, and
- (3) somewhere between minimally OK and exceptional.



Graphically, the scale looks like this: \* \* \* \* \*

Regarding the Primary Objectives, and knowing what you know, how would you rate yourself before the workshop, and how would you rate yourself now?	Before						After					
	Not OK					OK	Not OK					OK
	0	1	2	3	4	Ave	0	1	2	3	4	Ave
1. Adequate information about career options that fit with my career vision.	21	35	14	5	2	1.12	1	2	14	38	22	3.01
2. Adequate knowledge of how to do career research using resources, organizations and people.	22	24	24	5	2	1.23	1	1	12	29	34	3.22
3. Communication skills to connect with people in order to get direct, first-hand information about career options.	17	17	21	19	3	1.66	2	4	14	31	26	2.97
4. Knowledge about how to access and who to consult regarding information about career and training alternatives in the fields I am interested in.	20	33	21	3	0	1.09	1	2	16	37	21	2.97
5. Awareness of how current social and labour market trends may impact my career.	26	28	13	9	1	1.10	2	5	21	32	17	2.74
6. A written record of my competencies and accomplishments relevant to my career vision.	33	21	15	7	1	.99	4	7	21	33	12	2.55
7. Knowledge of my interests, values, and personal characteristics and how to use them to explore career options.	12	22	29	10	4	1.64	0	3	12	30	32	3.18
<b>Column Totals</b>	151	180	137	58	13		11	24	110	230	164	

Taken as a whole, the above results show a dramatic shift in competency from before the intervention began compared to after the intervention was completed.

- 61% of the before ratings were in the “Not OK” category, compared to 6% after the intervention. The proportion of ratings in the “OK” category increased from 39% to 94%.
- 2% of the before ratings were in the “Exceptional” category, compared to 30% after the intervention was finished.
- Before the intervention, all of the 7 mean scores were in the “Not OK” range. For the after ratings, all of the mean scores were in the “OK” range, and almost half of them were more than “Minimally OK” (i.e., ≥ 3.0).

By most standards, service providers would view these as clinically meaningful results.

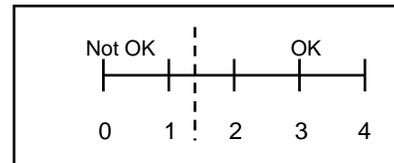
**Table 21. Response Frequencies of Post-Pre Self-Assessments of Intervention-Specific Survey Items Pertaining to Job Search.**

In responding to the questions, please use a two-step process.

(A) decide on whether the statement was/is **adequate (OK)** or **not adequate (Not OK)**, then

(B) assign the appropriate rating:

- (0) unacceptable,
- (1) not really acceptable, but almost OK,
- (2) adequate, but just barely (still OK otherwise it would be 0 or 1),
- (4) exceptional, and
- (3) somewhere between minimally OK and exceptional.



Graphically, the scale looks like this: \* \* \* \* \*

Regarding the Primary Objectives, and knowing what you know, how would you rate yourself before the workshop, and how would you rate yourself now?	Before						After					
	Not OK	OK				Ave	Not OK	OK				Ave
1. An understanding of how using networking is important for developing employment opportunities.	4	19	30	12	8	2.01	0	0	7	26	40	3.45
2. A resume that includes your competencies and accomplishments relevant to your employment goal.	3	19	27	12	12	2.15	0	0	8	26	39	3.42
3. Confident in my job search tools (e.g., resumes, cover letters, application forms, professional pitch).	3	27	24	15	4	1.86	0	1	6	35	31	3.32
4. Confidence in the effectiveness of my written tools.	4	15	31	17	6	2.08	0	1	9	34	29	3.25
5. Confidence in my verbal communication skills for employment situations such as cold calls, meetings, interviews, and getting first-hand information	5	24	27	9	8	1.88	0	3	10	33	27	3.15
6. Knowledge of different ways to identify and connect with people and organizations about potential career opportunities.	3	25	34	8	3	1.77	0	4	9	30	30	3.18
7. A network of employment related contacts.	9	31	24	7	2	1.48	2	5	17	28	21	2.84
8. Confidence that my work search activities are effective.	5	25	30	11	2	1.73	1	2	8	33	29	3.19
9. Clarity regarding my emerging goals and next steps.	5	22	32	10	4	1.81	0	0	13	30	30	3.23
10. Knowledge about how to access and who to consult regarding information about employment alternatives in my field.	5	26	31	10	1	1.67	0	2	11	30	30	3.21
11. Confidence that I can demonstrate my competencies to employers (i.e., my knowledge, skills, personal attributes, etc.).	3	16	31	18	5	2.08	0	0	13	28	32	3.26
12. Strategies for assessing job offers and negotiating terms of employment.	7	27	24	11	4	1.70	0	7	18	21	27	2.93
<b>Column Totals</b>	<b>56</b>	<b>276</b>	<b>345</b>	<b>140</b>	<b>59</b>		<b>3</b>	<b>25</b>	<b>129</b>	<b>354</b>	<b>365</b>	

Taken as a whole, the job search results also show a dramatic shift in competency from before the intervention began compared to after the intervention was completed.

- 38% of the before ratings were in the “Not OK” category, compared to 3% after the intervention. The proportion of ratings in the “OK” category increased from 62% to 97%.
- 7% of the before ratings were in the “Exceptional” category, compared to 42% after the intervention was finished.
- Before the intervention, only 4 of the 12 mean scores were in the “OK” range. For the after ratings, all of the mean scores were in the “OK” range, and all but two of them were more than “Minimally OK,” (i.e.,  $\geq 3.0$ ).

By most standards, service providers would view these as clinically meaningful results.

**Table 22. Comparison of Before and After Mean Scores for Career Decision Making Subscales, Revised to include Intervention-Specific Questions.**

Scale	Delivery	n	Before	After	Results
Knowledge	Independent	48	11.54 (6.00)	26.73 (6.10)	Main Effect for Time: $F(1, 75) = 341.30, p < .01$ Main Effect for Delivery: $F(1, 75) = .27, p = .61$ Delivery x Time: $F(1, 75) = .57, p = .45$
	Assisted	29	11.48 (6.82)	27.97 (5.18)	
	Total	77	11.52 (6.28)	27.19 (5.77)	
Skill	Independent	48	9.33 (5.46)	19.73 (5.63)	Main Effect for Time: $F(1, 75) = 240.30, p < .01$ Main Effect for Delivery: $F(1, 75) = .07, p = .80$ Delivery x Time: $F(1, 75) = 2.31, p = .13$
	Assisted	29	8.48 (6.22)	21.14 (4.75)	
	Total	77	9.01 (5.73)	20.26 (5.33)	
Total Score	Independent	48	28.46 (14.39)	61.40 (15.74)	Main Effect for Time: $F(1, 75) = 303.08, p < .01$ Main Effect for Delivery: $F(1, 75) = .15, p = .70$ Delivery x Time: $F(1, 75) = 1.30, p = .26$
	Assisted	29	27.28 (16.39)	64.83 (12.64)	
	Total	77	28.01 (15.08)	62.69 (14.66)	

NOTE. There were no personal attribute questions that were unique to the Career Decision-Making intervention.

The results above basically mirror the results on the survey items that were common to both interventions. For participants in the Career Decision-Making group, the differences between the before treatment and after treatment scores are statistically significant, and the amount of change is similar for both modes of delivery. Since the length of the subscales is increased, there was opportunity for the magnitude of the change to be greater, but it is interesting to note that the after-intervention scores are all more than twice as great as the before-intervention scores.

**Table 23. Comparison of Before and After Mean Scores for Job Search, Revised to include Intervention-Specific Questions.**

Scale	Delivery	n	Before	After	Results
Knowledge	Independent	35	15.77 (5.48)	25.09 (4.33)	Main Effect for Time: $F(1, 71) = 217.82, p < .01$ Main Effect for Delivery: $F(1, 71) = 1.32, p = .26$ Delivery x Time: $F(1, 71) = 3.60, p = .06$
	Assisted	38	15.63 (5.76)	27.37 (3.37)	
	Total	73	15.70 (5.59)	26.27 (4.00)	
Skill	Independent	35	14.31 (4.96)	23.80 (5.02)	Main Effect for Time: $F(1, 71) = 246.79, p < .01$ Main Effect for Delivery: $F(1, 71) = 3.44, p = .07$ Delivery x Time: $F(1, 71) = 2.33, p = .13$
	Assisted	38	15.13 (6.30)	26.66 (3.80)	
	Total	73	14.74 (5.67)	25.29 (4.63)	
Personal Attributes	Independent	35	18.86 (6.98)	30.11 (6.07)	Main Effect for Time: $F(1, 71) = 187.55, p < .01$ Main Effect for Delivery: $F(1, 71) = 6.47, p = .01$ Delivery x Time: $F(1, 71) = 2.33, p = .13$
	Assisted	38	20.47 (7.98)	34.55 (4.07)	
	Total	73	19.70 (7.51)	32.42 (5.56)	
Total Score	Independent	35	48.94 (16.62)	79.00 (14.86)	Main Effect for Time: $F(1, 71) = 240.57, p < .01$ Main Effect for Delivery: $F(1, 71) = 4.02, p = .05$ Delivery x Time: $F(1, 71) = 2.81, p = .10$
	Assisted	38	51.24 (19.45)	88.58 (10.38)	
	Total	73	50.14 (18.06)	83.99 (13.53)	

The results of the analyses of survey items that were unique to the Job Search group basically mirror the results on the survey items that were common to both interventions. The differences between the before treatment and after treatment scores are statistically significant, the amount of change is similar for both modes of delivery, but the personal attribute and total scores for the assisted group are higher than for the independent group.

## Impact Outcomes

In our earlier description of the evaluation framework that guided our research, we made a distinction between outcomes pertaining to client learning (knowledge and skill that could be linked directly to the intervention), outcomes pertaining to personal attributes which accompanied the changes in knowledge and skill (e.g., optimism, confidence, etc.) and the impact of the client learning and personal attributes on the client's life (e.g., change in employment status, having a plan for follow-up action, need to access further assistance). These impact outcomes are important for they represent the ultimate end goal of an intervention. It is one thing for a client to learn how to make career decisions, but ultimately that learning should result in some sort of follow-up plan for continued action. Similarly, it is one thing for a client to learn job search skills, and to feel more optimistic about his or her ability to find a job, but the ultimate end goal is to use those job search skills to find employment.

**Action planning.** An important factor for sustaining change is the extent to which people are planful in their approach to ongoing career self-management. Thus, although we did not address action planning directly in our intervention, it is a logical step that likely would result from applying what was learned in the intervention and it was emphasized in the orientation for participating counsellors. Therefore, we identified action planning as an impact. To explore this factor we asked participants: "Do you have an action plan for implementing the information you have obtained?" Over 80% (n = 125) said they did have an action plan. When asked about the nature of their action plan, 118 participants provided the details provided in Table 24.

**Table 24. Components of Participant Action Plans.**

If you have an action plan, does it include:	Program	No	Maybe	Yes	Total
continuing to use the resources you were given in this study?	Career Decision Making Independent	1	5	25	31
	Career Decision Making Assisted	0	7	17	24
	Job Search Independent	1	2	24	27
	Job Search Assisted	1	3	32	36
	<b>Total</b>	<b>3</b>	<b>17</b>	<b>98</b>	<b>118</b>
requesting individual or group employment counselling when the study is finished?	Career Decision Making Independent	7	9	15	31
	Career Decision Making Assisted	1	7	16	24
	Job Search Independent	1	9	17	27
	Job Search Assisted	5	12	18	35
	<b>Total</b>	<b>14</b>	<b>37</b>	<b>66</b>	<b>117</b>
requesting to attend a workshop offered by the employment office when the study is finished?	Career Decision Making Independent	8	15	7	30
	Career Decision Making Assisted	4	10	10	24
	Job Search Independent	4	8	15	27
	Job Search Assisted	5	16	13	34
	<b>Total</b>	<b>21</b>	<b>49</b>	<b>45</b>	<b>115</b>

Generally speaking, most of the participants who did not have an action plan would appreciate help in developing one, as is depicted in Table 25.

**Table 25. Desire for Assistance in Developing an Action Plan.**

	<b>Program</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>
If you do not have an action plan, would you find it helpful to get assistance in forming an action plan?	Career Decision Making Independent	16	3	19
	Career Decision Making Assisted	4	2	6
	Job Search Independent	10	1	11
	Job Search Assisted	7	3	10
	<b>Total</b>	<b>37</b>	<b>9</b>	<b>46</b>

Looking at the results presented in Tables 24 and 25, the majority of participants (65%) reported that they felt sufficiently prepared to continue using the knowledge and skills they had developed through participating in the program and did not feel the need to follow up with individual or group assistance. Of those who did not have an action plan (30% of participants), 80% said they would find it helpful to get assistance in creating an action plan for moving forward with their careers.

**Employment status.** One additional factor attesting to the impact of the program on the lives of participants is employment status. To explore this impact we asked participants for their current employment status, and if they were working, how well their current job fit with their career vision. The results are depicted in Tables 26 and 27. When interpreting Tables 26 and 27, it is important to keep in mind that at the beginning of the study, 35 participants were employed either full or part time. At the end of the study, 50 participants were employed, an increase of almost 50%. At the beginning of the study, 6 participants said their work was a good fit for them, 11 said it was an OK fit for them, and 18 said it was a poor fit for them. At the end of the study, 24 participants said their work was a good fit for them (3 or 4 on the scale indicated in Table 27) and an additional 11 said that their work was an OK fit. Thus the number of participants who thought their job was a good fit for them, increased four-fold. It is interesting to observe that the proportion of employed people was highest for the Job Search-Assisted group, which likely is related to the finding that for Job Search participants, assistance produced a greater effect on skill acquisition than did working independently. To summarize, not only did the number of people who were employed increase substantially, but the proportion of those people who reported that their job was a good fit for them, increased as well. One can speculate about the positive economic impact of these results and also the positive impact on job stability.

**Table 26. Current Employment Status.**

Program	Working	Not working	Total
Career Decision Making Independent	12	33	45
Career Decision Making Assisted	11	18	29
Job Search Independent	11	24	35
Job Search Assisted	16	16	32
<b>Total</b>	<b>50</b>	<b>91</b>	<b>141</b>

**Table 27. Fit of Current Job with Participant Career Vision.**

Program	Not OK		OK			Total
	0	1	2	3	4	
Career Decision Making Independent	4	2	4	4	1	15
Career Decision Making Assisted	4	2	1	3	1	11
Job Search Independent	3	2	2	3	2	12
Job Search Assisted	2	2	4	8	2	18
<b>Total</b>	<b>13</b>	<b>8</b>	<b>11</b>	<b>18</b>	<b>6</b>	<b>56</b>

## Process Data

In studies like the one described in this report, there are a variety of factors that could potentially contribute to the success (or lack of success) of the interventions. Some of these factors include the extent to which the intervention is a good match for the needs of the research participants, the extent to which service providers follow the intended game plan, and the extent to which clients are engaged in the intervention plan. (See Horan, 1980 for elaboration of this assertion.) We have already reported that clients attributed the reason for the majority of change they experienced to the intervention in which they participated, rather than to other factors in their lives or the context in which they lived. However, in order to link the client outcomes to the intervention, it is important to determine the extent to which the intervention plan actually was followed by both counsellors (treatment fidelity) and clients (intervention compliance). We documented treatment fidelity and intervention compliance using check-lists that tracked the processes that counsellors and clients used during the study.

The Initial Assessment Interview (see Annex E) was developed to identify clients who would be appropriate for a job search intervention or a career decision-making intervention and give those people the opportunity to participate in this research. Clients whose needs did not fit into one of these two categories were referred to other services offered by the agency. Virtually all of the service providers (only one or two exceptions) reported following the basic structure of the Initial Assessment Interview, establishing a collaborative relationship with a client, gathering data on job readiness, getting agreement on goals, getting agreement on next steps toward accomplishing goals, and checking client commitment. More than 87% of service providers indicated that they had followed the explicit steps involved in identifying the extent to which a client had already acquired the specific competencies covered in each intervention, or would benefit from acquiring those competencies. Thus it is possible to say with confidence that there was a good match between the clients' needs and the intervention they received.

Given the lament that in many research studies LMI was embedded in a larger intervention such as psychoeducational workshops or career counselling, which made it difficult to determine the independent contribution that LMI made to client change (See Sharpe, 2010), in this study, LMI was treated as the sole intervention. This meant that in the assisted delivery condition, it was important to ensure that interactions between counsellors and clients remained advising in nature and did not cross the boundary into counselling. A focus in the initial briefings with

managers and counsellors was on the differences between advising and counselling and the importance of making sure that the counsellor-client interactions were focused on advising. Horan (1980) refers to this as treatment fidelity. A protocol was developed that outlined the nature of the interactions and a checklist was developed to track the extent to which counsellors followed the guidelines. (See Annex F where the checklist is printed first, followed by a summary of the results.) The checklists served the dual purpose of reminding counsellors of the do's and don'ts of the interaction and also providing a record of the extent to which counsellors followed the intended game plan. The results of the checklist analysis indicated that the focus in the advice sessions was primarily on establishing a relationship, summarizing progress to date, and reviewing action plans for next steps. More than 95% of counsellors reported engaging in these types of behaviours. (See Annex F.) This could explain, in part, why those in the assisted delivery condition reported greater gains in skill acquisition and facilitative personal attributes compared to those in the independent delivery condition. About one-third to one-half of the counsellors reported engaging in behaviours intended to help clients clarify their interpretation of the LMI they accessed, find other related LMI resources, or apply the LMI to their own personal situations. The data collected do not permit making a judgement as to whether this was because fewer clients required this information or whether it represents a counsellor preference, but the success of the independent delivery condition would suggest that fewer clients required clarification or assistance with applying the information to their own personal situation, therefore counsellors spent the majority of their time focused on building a supportive relationship and creating action plans for next steps.

Another important step in building a link between client outcomes and the interventions they received is being able to document the extent to which clients engaged in the intervention. Even if service providers follow the game plan precisely, the intervention is unlikely to produce positive outcomes if the clients are not also following the game plan. Horan (1980) refers to this as treatment compliance. To document client engagement, a checklist was developed for clients to document the resources they accessed and the number of times they accessed those resources. Because the content of the intervention packages was different for career decision-making clients and job search clients, separated checklists were developed for each intervention. (See Annex G and Annex H where the checklists are printed first, followed by a summary of the results.) Generally speaking the checklist data show that clients were very engaged in the intervention process. Clients accessed between 1 and 20 different resources and accessed those resources 2-158 times. On average, clients in both intervention conditions accessed 10 different resources and the total number of times they accessed any resource was 26 times for Career Decision-Making clients and 41 times for Job Search clients. The most common sources of LMI for clients in the Career Decision-Making intervention were *Career Cruising* and the National Job Bank, which were accessed by more than 85% of clients. The next most frequently accessed resources included the provincial job banks, *Job Futures*, and the information binder that contained the intervention process, accessed by more than 70% of the clients. The majority of clients accessed a single resource on more than 1 occasion and in the case of the most frequently accessed resources the mean number of times accessed would be about 3 times. Furthermore, clients were quite resourceful and innovative regarding other resources they accessed. They consulted with friends, family members, past employers, and prospective employers as well as common sources such as newspapers and college or university calendars. (See Annex G.)

Clients in the Job Search Group were similarly resourceful. The most common sources of LMI for this group were the National Job Bank, provincial job banks, and Monster.ca, which were accessed by more than 60% of clients. About half of job search clients consulted *Career Beacon*, *Career Cruising*, or *Career Owl*. About 40% of clients used Government of Canada LMI, the intervention binder, or other resources in the Career Resource Centre. Again, the

majority of client consulted these sources on several occasions and they also consulted with friends, family members, prospective employers, past employers, and newspapers.

Taken as a whole, the process data indicate that clients were appropriately matched to the intervention they received, counsellors followed the game plan and did not digress into career counselling, and clients were engaged in the intervention process. Thus we can say with confidence that the intervention was implemented in the field, and that clients found the intervention relevant and therefore were engaged in the process. This coupled with the attribution data indicate that there is a strong link between the client outcomes and the interventions that were used in this project.

## Summary of Results

This research project was designed to address two research questions: If clients receive an initial needs assessment and receive a LMI intervention tailored to meet their needs, (a) to what extent is independent self-help a sufficient process in order for clients to use LMI effectively? and (b) to what extent does assistance by a service provider enhance the effective use of LMI? Both questions were addressed in a context where client needs were assessed to determine whether LMI for career decision making or LMI for job search would be an appropriate intervention to address the client needs and LMI packages were developed to address each of those needs (one LMI package tailored to career decision making and a second LMI package tailored to job search). In both cases, the LMI packages contained lists of possible resources, instructions for accessing the information, and tips for interpreting and applying the information to a client's personal situation. About half of the clients were randomly assigned to a delivery condition where they received two 20-30 minute advising sessions (assisted self-help) and the other half worked independently (independent self-help). Clients remained in the program for 3 weeks. Checklists were developed to track how closely the counsellors followed the Initial Needs Assessment protocol and the protocol for the advising sessions. Analysis of the tracking checklists indicated that counsellors did in fact follow the protocol for the Initial Needs Assessment and also adhered to the agenda for the advising sessions. Checklists also were developed to track the resources that clients accessed during the intervention. Analysis of the client tracking checklists indicated that clients were engaged in the intervention in an appropriate manner. Thus we can say with confidence that the counsellors implemented the intervention as intended and the clients also followed the game plan as intended. This permits us to say that the project isolated the use of LMI as a viable approach, independent of other interventions such as psychoeducational workshops or career counselling.

Overall, the answer to both research questions is yes. LMI that is tailored to meeting a specific set of client needs and used in an independent self-help fashion is sufficient to promote statistically significant and clinically important client change and assistance by service providers enhances many of the client outcomes. Looking at the whole set of statistical analyses comparing the before-intervention and the after-intervention subscale scores, in most cases the amount of client change was statistically significant ( $p < .01$ ) and at a clinical level, scores on the assessment instruments after the intervention finished were twice as high as scores before the intervention began. Thus the increases experienced by participants in this study were clinically meaningful as well as statistically significant. All of the intervention-delivery combinations in this study produced significant change in general ability to access and use LMI, knowledge about how to use LMI, skills for using LMI, taking action on the information that was accessed, and personal attributes, such as optimism about one's career future, confidence in one's ability to manage future career transitions, and by inference, motivation to be more self-directed in managing one's career. Assisted self-help tended to produce greater change than

independent use especially in the skills that clients acquired, the positive personal attributes that were cultivated, and the general ability to access and use LMI.

At the end of the program 35% of the participants were employed (compared to 23% before the program began). This represents a 50% increase in the number of people who were working at the end of the study, compared to the beginning. Moreover, two-thirds of those who had a job thought that it was a good fit with their preferred employment future, which represents an increase by a factor of four. It is interesting to note that the changes in employment status were similar for both independent and assisted groups. Of those who had not yet found employment, 65% reported that they felt sufficiently prepared to continue using the knowledge and skills they had developed through participating in the program and did not feel the need to follow up with individual or group assistance. Of those who did not have an action plan (30% of participants), 80% said they would find it helpful to get assistance in creating an action plan for moving forward with their careers.

As Hersen and Barlow (1976) point out, statistical significance is not a substitute for clinical significance. Thus, in this study, it is important to note that the increases in knowledge, skills, and personal attributes scores, coupled with the increase in number of people employed and the extent to which their job was a good match for their ultimate career goals, all point towards clinically significant results, not just statistically significant results. Moreover, 80% of clients attributed the changes they experienced as the result of the program in which they participated and not other factors operating in their lives.

## **Conclusions and Implications**

### **Research Methodology**

The majority of this report is focused on the outcomes that clients experienced as a result of their participation in the research. The data indicate that the interventions were effective, however, it is the opinion of the research team that the methodology that formed the foundation for the project also contributed to the positive results. Therefore, some of the more prevalent aspects of the project that contributed to the success of the interventions are summarized below:

1. The methodology and the interventions were built from the ground up. The project began with a series of snapshot interviews, in order to get an idea of the types of LMI resources that service providers found most useful, the way that service providers determined that LMI would be an appropriate intervention for a client, and the way that services providers typically interacted with clients who were using LMI as their primary intervention. (See Hiebert, et al., 2010). This permitted the research development team to use existing practices as a cornerstone of the project, spanning intervention development, data collection protocols, service provider activities, participant activities (process data), and instrument design aligned to the interventions. We think this is largely responsible for the degree to which the research methodology has already been incorporated into the daily practices of service providers who participated in this project.
2. Much care went into the design and construction of the intervention packages to make sure the intervention was focused on meeting a client's needs and assisting the client to process the information that was accessed. The design of the intervention packages is in sharp contrast to an approach which boils down to "there is the career development resource library, go ahead and access the information, and feel free to help yourself to anything you find useful." Few agencies would admit to adopting that approach, however, our impression from observing many agencies is that clients often experience the LMI process as a "figure it

out for yourself” process. The interventions in this study definitely were self-help interventions, but they did provide a process to help clients makes sense out of the information they accessed and to apply that information to their own life situation.

3. The protocol for the advice sessions made sure that service providers did not overstep the boundary into counselling. This was important in making sure that we were tapping the effects of LMI per se, and not LMI embedded in other more robust interventions. However, in the future, the advice protocols could be used as a guidepost for providing minimal, but still effective, intervention assistance. We suspect that often service providers inadvertently slip into a mode of providing the type of service that they are most comfortable with. For people with a counselling background this might result in them providing a more intensive service than a client actually needs, and may in fact end up making a client more reliant on an agency and less reliant on their own resources. There is evidence that the assisted delivery protocol, even though it spans only two 20-30 minute interactions, is sufficient to provide a meaningful increment in some client outcomes.
4. The resources described above have all been developed through the funding provided for this project. Although the development of these resources was rather time consuming and resource intensive, that development has now been done, and the resources are available to be used as inputs for other agencies wishing to incorporate the approaches that have demonstrated success in this project. There would be minimal, if any, additional resources required to transfer the interventions to other agencies working in the two provinces where this research occurred. In order to transfer the procedures to other provinces, only minimal resource commitment would be required, namely to incorporate local LMI resources into the intervention packages. Thus, with briefing to staff on the importance of following the procedures that have demonstrated success, and on-going follow-up to ensure that the procedures were being followed, the interventions developed in this project could be used with reasonable expectations for similar results.
5. The above observations and suggestions should be considered in the context of the comments offered by Horan (1980). If the procedures are followed, then similar results could be expected. The procedures involve:
  - a. making sure that the intervention is a good match for the needs a client expressed,
  - b. that the LMI packages are provided for clients in their entirety, as was done in this study,
  - c. that the client tracking process is used to promote client engagement in the process,
  - d. that the counsellor advice protocol is followed to make sure the way in which the intervention is introduced is appropriate, and
  - e. the outcome measures are administered so that there is tangible evidence pertaining to the effectiveness of the intervention.

These steps are all part of a typical service delivery process and would not be additional work for those providing services, but they would require attention to detail and a small amount of time to compile the results across service providers in order to be able to use the data to provide evidence of the success of the interventions. The bottom line conclusion **does not suggest** that any old kind of LMI, provided to clients in any old kind of way, is likely to result in predictable client change. However the results of this study **do suggest** that the sort of LMI packages used in this project, carefully tailored to meet specific client needs, and containing suggestions for how to access the information, plus how to interpret the information, and how to apply it to a clients’ own specific situation, can result in predictable and substantial client gains.

The results of this study provide strong validation for the evaluation framework developed by the CRWG. The participant researcher approach utilized in this project made intuitive sense to the counsellors and managers and informal reports from the field indicate that participation in this project has already made a positive impact on the way counsellors interact with their clients. Several counsellors have mentioned that 4 months after the study was completed, they are continuing to use the resources, and the processes suggested in the study. In most agencies, the counsellors who participated in this project have shared the resources and the processes with their colleagues and many managers are making plans to do professional development with other agencies in their jurisdiction regarding the tools and resources used in this study and the positive results that were obtained.

## **Implications for Practice**

The research summarized in this report contains many implications for practice in the delivery of career services. These are summarized below.

1. We believe that the overall process used in this research had a large role to play in the positive gain that clients experienced as a result of participating in the project. The role of a structured client needs assessment interview process is essential. In this study, the initial assessment successfully identified clients who would be suitable for the interventions that were developed. In order for interventions to be successful, it is important to make sure that the intervention is appropriate for addressing the needs that prompted a client to seek assistance. Often, agencies develop programs that they think will be appropriate for the clients they serve and then clients are forced into the existing programs that an agency offers. We think that the reverse order is more appropriate, i.e., that client needs are first of all identified, and then programs are developed to address the needs that clients express. The data in this study support this latter contention. The process used in this research identified the resources that were designed to address two frequently occurring categories of client need. Then interventions were developed keeping in mind the kind of client characteristics and client needs that the intervention was intended to address and the sorts of client outcomes that could be expected to occur as a result of the intervention. Next, an assessment protocol was developed to identify clients who would be suitable for the intervention, and appropriate procedures were developed to track the extent to which the intervention was implemented as intended and the degree to which clients were engaged in the intervention process. The client outcomes could then be assessed in a manner that made it possible to link the client changes to the intervention process. This is one of the first studies that makes it possible to demonstrate a clear link between the processes that service providers and clients engage in and the outcomes that clients experience.
2. The nature of the intervention also played a large role in the success that clients experienced. The binders that clients received contained lists of available resources, but also instructions for how to access those resources, tips on how to interpret the information they obtained, and suggestions for how to translate the information into a plan for follow up action. The combination of identifying the resources, consolidating the resource lists into one place (the binder) that was easy to access and easy to follow, and suggestions for how to process the information, played a large role in creating a successful experience for the research participants.
3. The results of this study suggest that in many cases a minimalistic intervention, such as providing tailored LMI to clients, is sufficient to produce change in many people. Not everyone needs career counselling and in many cases a structured self-help program that client use independently is sufficient. It is true that in some cases, minimal

assistance will help to produce greater gains, but it is important to remember that the assistance provided in this research consisted of two 20-30 minutes sessions intended to provide support to clients to continue their self-help and to clarify points that clients may have found confusing.

4. Many policy makers have challenged researchers and service providers to make a more convincing case for the efficacy of career services. However, one central question that needs to be addressed is "What constitutes acceptable evidence?" In the initial CRWG study of evaluation practices there was widespread agreement that evaluation was important, but respondents also mentioned that many important variables are going unmeasured and unreported (Lalande & Magnusson, 2007; Lalande, Hiebert, Magnusson, Bezanson, & Borgen, 2006; Magnusson, & Lalande, 2005). In the current study, it was possible to assess client gains in knowledge, skill, and personal attributes that could be related directly to the intervention, as well as impact outcomes such as employment status that could be seen as deriving from the changes in knowledge, skill, and personal attributes. Using this type of methodology makes it easier for service providers to infuse evaluation into their regular way of providing services and in the process build an argument to support the contention that the intervention is responsible for the impact on the lives of clients.
5. It is a common lament voiced by researchers (e.g., Barlow, 1980; Franks, et al., 1982; Hiebert, et al., In Press) that clinical procedures are not guided by scientific research. One reason put forward for this is that researchers are too reliant on experimental methodology that will never be used in private practices or clinics (Franks, et al., 1982). One solution is for researchers to adopt methodologies that incorporate measures that can easily be adopted by practitioners and that practitioners find relevant (Barlow, 1980; Franks et al., 1982). A way of incorporating the philosophy underlying these suggestions is the notion of *Local Clinical Scientist*, introduced by Trierweiler and Stricker (1998). *Local Clinical Scientists* are practitioners who adopt a scientific attitude towards the work they do. They treat their client change interventions as investigations, tracking the various factors that might influence client change, documenting the client changes that are observed, and looking for patterns that connect contextual factors, processes used to initiate client change, and outcomes achieved. Each client seen becomes an  $n = 1$  experiment. Over time and multiple iterations of an intervention, patterns emerge, and predictions can be made about treatment effectiveness. The belief is that this approach provides valuable and trustworthy evidence that can help guide decisions regarding which interventions are likely to be most effective for particular clients. This is not to suggest that observations made by *Local Clinical Scientists* are better than, or should replace, observations derived from RCTs (RCTs??), but it is reasonable to suggest that a local clinical scientist approach is an equally viable alternative to traditional approaches for demonstrating the efficacy of counselling psychology interventions. The methodology used in this project is readily adaptable to a *Local Clinical Scientist* approach, and we think it offers great promise as a methodology that could be used to demonstrate the effectiveness of career development interventions. As Barlow (1980) points out, this will help practitioners not only to become more responsive to research evidence but also it will help them to produce some of that evidence themselves.
6. Finally, we think that the participant-research approach used in this project provides a good example for conducting future studies on the impact of career services. In this study an attempt was made to embed the research plan into the regular practices of people in the field. The clients in this project were a subset of the clients that regularly sought assistance from the agencies involved in the project. The initial assessment and

intervention plans were derived from the information gained from the snapshot interviews conducted in Phase 1 of this project. We believe that this sort of approach increases the extent to which research findings will end up being incorporated into the regular practices of service providers. Informal feedback from the managers and counsellors participating in this projects supports that belief.

## Next Steps and Recommendations

The impact of this project on the normal way of doing business in the field has already begun to be demonstrated. In most of the participating agencies, inservice has already taken place (or is planned in the near future) to brief staff who did not participate in the project, about the successful outcomes and the revised ways of providing services that were responsible for the outcomes. Inservice also is planned for the wider service-provider community within the jurisdictions of the participating agencies in each of the participating provinces with the goal of making all agencies aware of the service delivery processes used in this project and the positive outcomes that were obtained. The materials are easily adaptable to other provinces and territories and could be easily formatted to be available for download from the internet. The resources needed to do this would be minimal, compared to the potential gain in effective client services. It also would be appropriate to make the results available to other jurisdictions involved in the delivery of career services. To this end, presentations have already been made to the New Brunswick Career Development Action Group conference in December 2010, the CANNEXUS conference in January 2011, the Saskatchewan Career Development conference in April 2011, and the Canadian Counselling and Psychotherapy Association conference in May 2011. However, more could be done if adequate resources were found to support a wider distribution of the results.

Building on the success of this project, a need was expressed in the field for replicating the research with francophone participants, which would involve adapting the materials into French and working with francophone researchers to duplicate the methodology with francophone participants. This project is now underway. There also was a need expressed to expand the scope of the intervention to address other employability needs that potentially could be addressed through LMI, for example employment maintenance. In addition, it would be useful to replicate the findings from the current study with another anglophone sample working in a different province. These replications are important for determining that the results in this study were not a "one off" outcome, but represent trustworthy interventions that will produce similar results in a variety of work settings and with a variety of clients (cf. Barlow, 1980; Franks et al., 1982; Sulzer-Azaroff, & Mayer, 1991).

In the fall of 2003, a *National Symposium on Career Development, Lifelong Learning and Workforce Development* was held and all Canadian provinces and territories were invited to send teams of service providers, researchers, and employers to address issues related to career development and the workforce. At that symposium, Canadian policy makers issued the following challenge to the career development community : "*You haven't made the case for the impact and value of career development services.*" We believe that the data from this study provide an initial step in the direction of making the case for the impact of services. When practitioners adopt a *Local Clinical Scientist* perspective, research and practice become mutually symbiotic, each informing the other. Adopting a *Local Clinical Scientist* perspective will result necessarily in the integration of research and practice, as practitioners begin to see their roles as both providing services and providing evidence of the effectiveness of those services. The evidence will not necessarily come from standardized assessments, but often will come from informal assessments that document the knowledge clients have acquired, the skills they have developed, the intrapersonal characteristics they have cultivated, and the life-impact changes they have experienced. When co-creating with clients a plan for reaching the client's

goals, intervention planning and evaluation planning will both be addressed at the outset. Questions regarding “What will we do together?” will be addressed simultaneously with questions regarding “What will we use as the evidence that change is occurring?”. When that begins to happen, evaluating client outcomes will become an integral part of intervention planning and a large step will have been taken toward providing evidence of the impact of career services. In order for that to happen, the boundaries surrounding what constitutes acceptable evidence will need to be broadened to include the type of procedures we have used in this study.

Another important aspect of continuing research in this field concerns the maintenance of treatment effects. In Phase 3 of the current study, a series of telephone interviews was conducted with clients to determine the enduring effects of participation in this research. A subset of participants were contacted 4 months after the exit interviews to look at the maintenance of the gains summarized in this report. In a similar vein, informal reports from the practitioners involved in this research indicated that their participation in this research had a noticeable positive effect on the way they deliver services. Focus groups conducted with service providers 4 months after the project was completed will provide a systematic way of looking at the longer term impact of this research on the practices of service providers.

Finally it is important to comment on the substantial support that this research received from the participating provinces and agencies. The leadership in the provinces was exceptionally strong. Managers and supervisors were active in coordinating the field work and supporting the service providers participating in this project. There was one source of frustration that emerged. Service providers, managers, and supervisors frequently mentioned the need for keeping LMI current and also making sure that local LMI resources were kept up to date. There was a request that when federal websites were updated that a communiqué be issued informing service providers of the changes. Failing that, adding a note to the front page of websites indicating when the last update occurred would be helpful. However, regarding the service delivery procedures used in this study, there was a high degree of compliance. The service providers caught the spirit of what we were trying to do in this research project and adapted their usual ways of interacting with clients to conform to the protocols used in this research. In some cases, the service providers reported that they experienced some discomfort with the restrictive guidelines around conducting the initial client needs assessment and engaging in the advice and information sessions. However, they did comply with the research guidelines and in many cases actually found that adherence to this new way of operating helped them be more focused and more efficient in their interactions with clients. This is undoubtedly one of the factors contributing to the continuing use of the research materials, even though the formal project has finished.

## **Conclusion**

Although there has been abundant research relating to LMI, most of the research has focused on the nature of LMI, how accessible the LMI was, and general comments on the usefulness of the information obtained (e.g., Createc, 2003; Savard & Michaud, 2005). Of the studies that focused on intervention, it is difficult to determine the impact of LMI per se because LMI was most often part of larger and robust interventions such as psychoeducational career planning workshops or career counselling (Savard & Michaud, 2005; Sharpe, 2010). There is very little literature about the direct contribution of LMI to employment or career decision-making. In this study, an attempt was made to isolate LMI as the sole intervention, provided for clients under two delivery conditions. Therefore, the results of this study provide evidence of the positive impact of LMI on client outcomes, independent of any effects resulting from other interventions.

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## Annex A

### Client Demographic Information

### Assessing the Impact of Labour Market Information

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Please provide the background information requested below. This information will help us evaluate the effectiveness of the project. You are free to omit any questions that you feel uncomfortable answering, however, it will be most helpful to us if you answer all questions.

Name:	
Gender:	<input type="checkbox"/> Male <input type="checkbox"/> Female
Year of Birth (yyyy) :	
Current city of residence:	
Current province of residence:	
Name of agency offering you service:	

Please indicate your education qualifications

Education Level	Year obtained
Less than a High School Graduation Certificate	
High School Graduation Certificate	
Trade or Technical Certification	
College Diploma	
University Bachelor degree	
University graduate degree	
Other (please specify)	

Please indicate your employment history

Employment History	
How many different jobs have you had in the last 5 years?	
Were you unemployed in the last 5 years? If yes, please give an estimate of the number of months you were unemployed during the last 5 years.	
Please provide a general idea of the kind of work you have done in the last 5 years (i.e. retail, construction, manufacturing, forestry, etc.)	

Have you previously participated in other career programs or accessed individual employment counselling?

Yes       No

If yes, please describe the kind of services you participated in (i.e. job search workshops, training programs, individual employment counselling, life skills workshops, financial planning workshops):

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Are you a citizen or permanent resident of Canada? (ie legally entitled to work in Canada)

Yes       No

Current work status

part-time work       full-time work       not currently working

If currently working, do you consider your work to be...

a good fit for you       an okay fit for you       a poor fit for you

## Annex B

### Assessing the Impact of Labour Market Information Initial Survey

Name: \_\_\_\_\_

Location where you received service: \_\_\_\_\_

Date: \_\_\_\_\_

Please read the following statements and indicate the extent to which they describe you.

To help you provide a more accurate answer, please use the two-step decision-making process described below when responding.

- A.** First of all decide whether generally speaking, the statement describes you, i.e., bottom line, does this describe you, yes or no?

No	yes
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- B.** Then, indicate the degree to which the statement describes (or does not describe) you using the scale below.

0 = not at all true of me

1 = sometimes that describes me,  
but it's so rare that it is really not part of who I am

2 = sometimes that describes me, but it's really only a small part of who I am

4 = one of my strong characteristics

3 = somewhere in between 2 and 4

Does this describe you?				
No		Yes		
0	1	2	3	4

1.	I have a clear understanding of what I need to do to move forward in my career.	<input type="checkbox"/>				
2.	I have a clear vision of what I want in my career future.	<input type="checkbox"/>				
3.	I have reviewed my past work, education and experience so that I know what skills and strengths I have.	<input type="checkbox"/>				
4.	I have a list of possible options that may fit with what I want in my career future.	<input type="checkbox"/>				
5.	I have knowledge of print and online resources that help me to research career/employment options.	<input type="checkbox"/>				
6.	I have confidence that career-related employment opportunities actually exist that fit with what I want in my career future.	<input type="checkbox"/>				
7.	I have identified my career/employment-related goals and the next steps to get there.	<input type="checkbox"/>				
8.	I have effective strategies for keeping myself motivated to achieve my career/employment goals.	<input type="checkbox"/>				
9.	I have optimism about what lies ahead in terms of meeting my career goals.	<input type="checkbox"/>				
10.	I have a realistic action plan (or schedule) summarizing the main career/employment-related activities I want to pursue and the processes I am engaging in	<input type="checkbox"/>				
11.	I have confidence in my ability to manage future career transitions	<input type="checkbox"/>				
12.	I am able to access resources that can help me implement my career/employment goals.	<input type="checkbox"/>				
13.	I am confident in my ability to research career, employment, and training options that are available	<input type="checkbox"/>				
14.	I am optimistic that I will obtain career-related work or training within the next 3-6 months	<input type="checkbox"/>				
15.	If you are currently working, to what extent is this work related to your career vision?	<input type="checkbox"/>				

## Annex C

### Using Labour Market Information for Career Decision-Making and Job Search Final Survey

Name: \_\_\_\_\_

Location where you received service: \_\_\_\_\_

Date: \_\_\_\_\_

#### First Some General Questions About Your Career Planning

You agreed to participate in a Research Study about four weeks ago. We would like to know what has happened over these four weeks. Below are several statements. For each statement, we are asking you to do two things. **Keeping in mind what you know now** about using labour market information for career decision making or job search, please think back to four weeks ago and indicate in the BEFORE column how OK you were with respect to this statement at that time. Next, think of NOW and in the AFTER column, indicate how OK you are now with respect to the statement.

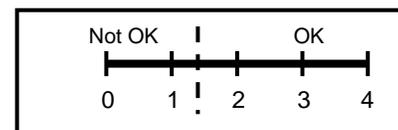
To help you provide a more accurate answer, please use the two-step decision-making process described below when responding.

**(A)** decide on whether the statement was/is **adequate (OK)** or **not adequate (Not OK)**, then

**(B)** assign the appropriate rating:

- (0) not adequate,
- (1) not really adequate, but almost OK,
- (2) adequate, but just barely (still OK otherwise it would be 0 or 1),
- (4) exceptional,
- (3) somewhere between minimally OK and exceptional.

Graphically, the scale looks like this: \* \* \* \* \*



**Knowing what you know now** about using labour market information for career decision making or job search, rate yourself before the research project and rate yourself now

**I had/have**

	Before					After				
	Not OK	1	2	3	OK	Not OK	1	2	3	OK
1. A clear understanding of what I need to do to move forward in my career	<input type="checkbox"/>									
2. A clear vision of what I want in my career future	<input type="checkbox"/>									
3. Reviewed my past work, education and experience so I know what strengths and skills I have	<input type="checkbox"/>									
4. A list of possible career options that I want in my career future	<input type="checkbox"/>									
5. Knowledge of print and online resources that help me to research career/employment options	<input type="checkbox"/>									
6. Confidence that career-related employment opportunities actually exist that fit with what I want in my career future	<input type="checkbox"/>									
7. Identified my career/employment-related goals and the next steps to get there	<input type="checkbox"/>									



15. To what extent would you say that any changes in the ratings on the previous pages are the result of your participation in this research project, and to what extent were they a function of other factors in your life?

mostly other factors	somewhat other factors	uncertain	somewhat this project	mostly this project
<input type="checkbox"/>				

16. Do you have an action plan for implementing the information you have obtained?  
Yes  No

**If you answered yes to the above question**, does your plan include:

	No	Maybe	Yes
16a. Continuing to use the Resources you were given in this study?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16b. Requesting individual or group employment counselling when the study is finished?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16c. Requesting to attend a workshop offered by the employment office when the study is finished?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Which parts of your Action Plan have you implemented?

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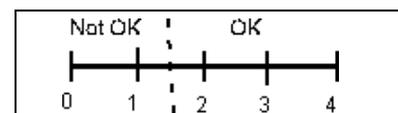
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18. **If you answered No to question 16**, would you find it helpful to get assistance in forming an action plan? Yes  No

19. Are you currently working? Yes  No



20. **If you answered yes to the above question**, to what extent does this work fit with your career vision?

<input type="checkbox"/>				
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Now some specific questions if you were in the Job Search Group.  
 If you were in the Decision Making Group, please make sure you have answered the Decision Making section above and leave this section blank.

**Job Search Groups Only**

**Knowing what you know now**, how would you rate yourself before the research project, and how would you rate yourself now?

**I had/have:**

	Before					After				
	Not OK		OK			Not OK		OK		
	0	1	2	3	4	0	1	2	3	4
1. An understanding of how using networking is important for developing employment opportunities.	<input type="checkbox"/>									
2. A resume that includes your competencies and accomplishments relevant to your employment goal.	<input type="checkbox"/>									
3. Confident in my job search tools (e.g., resumes, cover letters, application forms, professional pitch).	<input type="checkbox"/>									
4. Confidence in the effectiveness of my written tools.	<input type="checkbox"/>									
5. Confidence in my verbal communication skills for employment situations such as cold calls, meetings, interviews, and getting first-hand information about career opportunities.	<input type="checkbox"/>									
6. Knowledge of different ways to identify and connect with people and organizations about potential career opportunities.	<input type="checkbox"/>									
7. A network of employment related contacts.	<input type="checkbox"/>									
8. Confidence that my work search activities are effective.	<input type="checkbox"/>									
9. Clarity regarding my emerging goals and next steps.	<input type="checkbox"/>									
10. Knowledge about how to access and who to consult regarding information about employment alternatives in my field.	<input type="checkbox"/>									
11. Confidence that I can demonstrate my competencies to employers (i.e., my knowledge, skills, personal attributes, etc.).	<input type="checkbox"/>									
12. Strategies for assessing job offers and negotiating terms of employment.	<input type="checkbox"/>									

## Annex D

### Analysis of Initial Survey Scores (IS = pre-test) Compared to Final Survey (After Program) scores (FSAfter = posttest)

#### Analysis of Total Scores: Initial Survey (pre-test) compared to Final Survey After (posttest)

	IS (Pre-test)						FSAfter (Posttest)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	43	34.44 (8.32)	28	32.96 (11.50)	71	33.86 (9.65)	43	40.63 (11.24)	28	44.68 (7.77)	71	42.23 (10.15)
Job Search	34	37.21 (9.28)	35	41.97 (9.03)	69	39.62 (9.40)	34	42.94 (8.93)	35	48.09 (5.50)	69	45.55 (7.78)
Total	77	35.66 (8.81)	63	37.97 (11.08)	140	36.70 (9.92)	77	41.65 (10.29)	63	46.57 (6.76)	140	43.86 (9.18)
<b>Effect</b>			<b>F</b>			<b>p</b>						
Main effect for Time			77.49			<.01						
Main effect for Intervention			11.08			< 01						
Main effect for Delivery			5.65			.02						
Intervention-by-Time interaction			3.21			.08						
Delivery-by-Time interaction			3.10			.08						
Intervention-by-Delivery interaction			1.95			.17						
Intervention-by-Delivery-by-Time interaction			2.32			.13						

#### Analysis of Knowledge Subscale Scores: IS (pre-test) compared to FS After (posttest)

	IS (Pre-test)						FSAfter (Post-test)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	45	7.96 (3.01)	29	8.03 (3.52)	74	7.99 (3.20)	45	11.60 (2.84)	29	12.59 (2.51)	74	11.99 (2.74)
Job Search	34	11.15 (3.20)	37	11.43 (2.68)	71	11.30 (2.92)	34	12.82 (2.53)	37	13.54 (1.80)	71	13.20 (2.19)
Total	79	9.33 (3.46)	66	9.94 (3.49)	145	9.61 (3.48)	79	12.13 (2.76)	66	13.12 (2.18)	145	12.58 (2.55)
<b>Effect</b>			<b>F</b>			<b>p</b>						
Main effect for Time			124.18			<.01						
Main effect for Intervention			32.28			< 01						
Main effect for Delivery			1.80			.18						
Intervention-by-Time interaction			16.84			<.01						
Delivery-by-Time interaction			1.55			.22						
Intervention-by-Delivery interaction			.002			.97						
Intervention-by-Delivery-by-Time interaction			.20			.66						

#### Analysis of Skill Subscale Scores: IS (pre-test) compared to FS After (posttest)

	IS (Pre-test)						FSAfter (Posttest)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	46	11.15 (3.96)	28	10.89 (4.99)	74	11.05 (4.35)	46	14.46 (4.29)	28	15.68 (3.12)	74	14.92 (3.91)
Job Search	34	12.47 (3.89)	36	14.44 (3.89)	70	13.49 (3.99)	34	15.21 (3.45)	36	16.81 (2.34)	70	16.03 (3.02)
Total	80	11.71 (3.96)	64	12.89 (4.72)	144	12.24 (4.34)	80	14.78 (3.95)	64	16.31 (2.74)	144	15.46 (3.54)
<b>Effect</b>				<b>F</b>	<b>p</b>							
Main effect for Time				84.82	<.01							
Main effect for Intervention				9.80	<.01							
Main effect for Delivery				4.43	.04							
Intervention-by-Time interaction				4.37	.04							
Delivery-by-Time interaction				0.60	.44							
Intervention-by-Delivery interaction				1.47	.23							
Intervention-by-Delivery-by-Time interaction				1.68	.20							

**Analysis of Personal Attributes Subscale Scores: IS (pre-test) compared to FS After (posttest)**

	IS (Pre-test)						FSAfter (Posttest)					
	Independent		Assisted		Total		Independent		Assisted		Total	
	n	M	n	M	n	M	n	M	n	M	n	M
Career Decision Making	48	15.35 (3.47)	30	13.83 (4.32)	78	14.77 (3.86)	48	14.94 (4.56)	30	15.83 (3.40)	78	15.28 (4.16)
Job Search	35	13.46 (3.53)	38	16.13 (3.24)	73	14.85 (3.62)	35	14.91 (3.58)	38	17.50 (2.17)	73	16.26 (3.18)
Total	83	14.55 (3.60)	68	15.12 (3.90)	151	14.81 (3.73)	83	14.93 (4.15)	68	16.76 (2.88)	151	15.76 (3.74)
<b>Effect</b>				<b>F</b>	<b>p</b>							
Main effect for Time				10.91	<.01							
Main effect for Intervention				1.07	.30							
Main effect for Delivery				5.48	.02							
Intervention-by-Time interaction				.87	.35							
Delivery-by-Time interaction				3.04	.08							
Intervention-by-Delivery interaction				8.84	<.01							
Intervention-by-Delivery-by-Time interaction				3.52	.06							

## Annex E

### Checklist for Employability Assessment Interview

Client:
Research Practitioner:
Office:
Date of Employability Assessment Interview:
Duration of Employability Assessment Interview:
Employability Dimension: <input type="checkbox"/> Career Decision Making <input type="checkbox"/> Job Search

<b>STEPS</b>	<b>Not done</b>	<b>Sort of done</b>	<b>Done</b>
<b>STEP 1: Establish a Collaborative Relationship</b>			
• Greet client and determine objective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Establish the purpose of the interview	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Confirm motivation and client commitment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>STEP 2: Gather Employability Information</b>			
• Gather data on job readiness issues (financial needs, personal needs, motivation, ability to keep a job)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Gather employability information relevant to Career Decision Making	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's self-knowledge (abilities, interests, values, personal characteristics)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's knowledge of career options</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's ability to research options</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's knowledge of local labour market opportunities</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's career vision/employment goal</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Gather employability information relevant to Job Search	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Clarity of client's employment goal</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's need for appropriate job search tools (resume, references, professional pitch)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's ability to search for work (using networks, job interview skills)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ <i>Client's ability to assess employment possibilities</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Verify client perspective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Obtain agreement on identified needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

STEPS	Not done	Sort of done	Done
<b>STEP 3: Develop an Action Plan</b>			
• Come to agreement on a goal to be achieved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Come to agreement on first steps to take towards the goal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Check client commitment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Close interview	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you do not cover a major step above, please explain why:


Did you add an additional step?     Yes     No

If yes, what step and please explain why:


## Annex F

### Checklist for Advice and Information Sessions

Client:
Research Practitioner:
Office:
Date of Advice and Information Session:
Duration of Advice and Information Session:

Please fill this in as soon after your AIS session as possible to ensure accuracy.

<b>STEP 1: Re-establish relationship and discussion client progress</b>	
<input type="checkbox"/>	Greet and re-established collaborative relationship
<input type="checkbox"/>	Review goals and steps agreed upon
<input type="checkbox"/>	Invite client to report where s/he is at
<input type="checkbox"/>	Ask to review tracking sheet and if not done, completed it together; if done, reviewed what s/he had done
<b>STEP 2: Provide information and advice by using some of the interventions listed below: (It is not expected that you will do all of these with every client, but we want to know what you did cover with each client. Check off as many as apply)</b>	
1 <sup>st</sup> AIS	Did you:
<input type="checkbox"/>	1. help clients <b>find</b> a resource to link their interests and/or skills to job/career requirements
<input type="checkbox"/>	2. help clients <b>link</b> their interests and/or skills to job/career requirements
<input type="checkbox"/>	3. help clients <b>find</b> meaningful Labour Market Information
<input type="checkbox"/>	4. help clients <b>interpret/understand</b> Labour Market Information
<input type="checkbox"/>	5. help clients <b>find</b> any information that applies to their own career/job search (companies, employers, job fairs, job banks, openings/closings, industry information, job descriptions, wages, etc.)
<input type="checkbox"/>	6. help clients <b>interpret</b> any information so that it meant something to their own career/job search
<input type="checkbox"/>	7. help clients <b>find</b> resources on job search methods (resume, interview skills, etc.)
<input type="checkbox"/>	8. give clients <b>advice</b> on job search methods (resume, interview skills, etc.)
<input type="checkbox"/>	9. help clients to <b>find</b> decision-making tools
<input type="checkbox"/>	10. help clients to <b>use</b> decision-making tools
<input type="checkbox"/>	11. help clients <b>find</b> various examples/models of an action plan to follow
<input type="checkbox"/>	12. help clients <b>use</b> information to develop/implement their action plan

<input type="checkbox"/>	13.help clients <b>identify</b> skills needs and identify resources for skills development
<input type="checkbox"/>	14.help clients <b>apply</b> the above information (perhaps to make a decision or to use as a step in their action plan)
<input type="checkbox"/>	15. <b>share</b> relevant knowledge with client from your experience <b>and discuss</b> alternatives regarding sources of information or actions to be taken
<input type="checkbox"/>	16.other: please specify any other type of help you provided in the sessions
<b>STEP 3: Develop Next Steps of Action Plan</b>	
<input type="checkbox"/>	Agree on next steps to be taken by client in order to move client's goal forward
<input type="checkbox"/>	Confirm client understanding and commitment
<input type="checkbox"/>	Remind client to use tracking sheet
<input type="checkbox"/>	Schedule next interview

<p>A. Jot down the LMI resource(s) you helped the client with (both in and out of their guide) – both the name and the section (e.g. employer lists, job prospects, etc.) of the resource</p>	
<p>B. Indicate any variances from advice-only or information-only help.  If you think you slipped into counselling, give an example.</p>	
<p>C. Comment on the session – you, the client, the process, the resources.  This is where you would include notes on a client who dropped out of the study and why.</p>	

## Summary of Checklist of Advice and Information Sessions (AIS)

AIS 1 n = 63	AIS 2 n = 55	Focus of interaction and/or actions taken
<b>STEP 1: Re-establish relationship and discussion client progress</b>		
61	54	Greet and re-established collaborative relationship
62	52	Review goals and steps agreed upon
62	54	Invite client to report where s/he is at
61	52	Ask to review tracking sheet and if not done, completed it together; if done, reviewed what s/he had done
<b>STEP 2: Provide information and advice by using some of the interventions listed below: (It is not expected that you will do all of these with every client, but we want to know what you did cover with each client. Check off as many as apply)</b> <b>Did you:</b>		
28	26	1. help clients <b>find</b> a resource to link their interests and/or skills to job/career requirements
21	17	2. help clients <b>link</b> their interests and/or skills to job/career requirements
23	19	3. help clients <b>find</b> meaningful Labour Market Information
16	13	4. help clients <b>interpret/understand</b> Labour Market Information
29	24	5. help clients <b>find</b> any information that applies to their own career/job search (companies, employers, job fairs, job banks, openings/closings, industry information, job descriptions, wages, etc.)
13	17	6. help clients <b>interpret</b> any information so that it meant something to their own career/job search
26	21	7. help clients <b>find</b> resources on job search methods (resume, interview skills, etc.)
36	22	8. give clients <b>advice</b> on job search methods (resume, interview skills, etc.)
9	10	9. help clients to <b>find</b> decision-making tools
9	4	10. help clients to <b>use</b> decision-making tools
5	12	11. help clients <b>find</b> various examples/models of an action plan to follow
10	6	12. help clients <b>use</b> information to develop/implement their action plan
15	18	13. help clients <b>identify</b> skills needs and identify resources for skills development
9	9	14. help clients <b>apply</b> the above information (perhaps to make a decision or to use as a step in their action plan)
29	27	15. <b>share</b> relevant knowledge with client from your experience <b>and discuss</b> alternatives regarding sources of information or actions to be taken
8	8	16. other: please specify any other type of help you provided in the sessions
<b>STEP 3: Develop Next Steps of Action Plan</b>		
60	54	Agree on next steps to be taken by client in order to move client's goal forward
60	53	Confirm client understanding and commitment
61	51	Remind client to use tracking sheet
61	53	Schedule next interview

Numbers in columns 1 and 2 indicate the number of counsellors who reported doing the behaviour indicated in the third column.

## Annex G

### Career Decision-Making Client Tracking Sheet

**Client Tracking Sheet: Please help us by keeping track of what resources (information and people) you used to help you with your career/employment goals throughout the research project. You will be asked for this sheet at the end of the study. Many thanks in advance!**

**CLIENT NAME:**

Put a check mark beside any information resource you used. Put a checkmark for each time you used it	✓ ✓ ✓
Career Cruising - <a href="http://www.careercruising.com">www.careercruising.com</a>	
Job Bank - <a href="http://www.jobbank.gc.ca">www.jobbank.gc.ca</a>	
<a href="http://www.labourmarketinformation.ca">www.labourmarketinformation.ca</a>	
Saskjobfutures - <a href="http://www.saskjobfutures.ca">www.saskjobfutures.ca</a>	
New Brunswick Labour Market Information – <a href="http://www.gnb.ca/0126/index-e.asp">www.gnb.ca/0126/index-e.asp</a>	
ALIS Alberta - <a href="http://alis.alberta.ca">http://alis.alberta.ca</a>	
Career Development eManual University of Waterloo - <a href="http://www.cdm.uwaterloo.ca">www.cdm.uwaterloo.ca</a>	
National Occupational Classification System - <a href="http://www5.hrsdc.gc.ca">www5.hrsdc.gc.ca</a>	
CanLearn - <a href="http://www.canlearn.ca">www.canlearn.ca</a>	
Job Futures - <a href="http://www.jobfutures.ca">www.jobfutures.ca</a>	
Local Education Institutions	
Career Decision-making Binder (Employment Resource Centre)	
Other Resources in the Resource Centre	
Other Resources outside the Resource Centre (please tell us which ones)	



## Career Decision-Making Tracking Sheet: Summary of Results

**Client Tracking Sheet: Please help us by keeping track of what resources (information and people) you used to help you with your career/employment goals throughout the research project. You will be asked for this sheet at the end of the study. Many thanks in advance!**

**CLIENT NAME:** \_\_\_\_\_

Resource	Freq. n = 76	Number of times accessed (Frequency = number of clients)							
		1	2	3	4	5	6	7	8-11
Career Cruising - <a href="http://www.careercruising.com">www.careercruising.com</a>	66	(15)	(12)	(15)	(7)	(7)	(4)	(1)	(5)
Job Bank - <a href="http://www.jobbank.gc.ca">www.jobbank.gc.ca</a>	71	(21)	(13)	(11)	(6)	(2)	(1)	(6)	(11)
<a href="http://www.labourmarketinformation.ca">www.labourmarketinformation.ca</a>	55	(26)	(13)	(7)	(8)	(1)			
Saskjobfutures - <a href="http://www.saskjobfutures.ca">www.saskjobfutures.ca</a>	42	(20)	(11)	(3)	(4)	(1)	(1)	(1)	(1)
New Brunswick Labour Market Information – <a href="http://www.gnb.ca/0126/index-e.asp">www.gnb.ca/0126/index-e.asp</a>	31	(20)	(6)	(1)	(2)	(1)	(1)		
ALIS Alberta - <a href="http://alis.alberta.ca">http://alis.alberta.ca</a>	31	(17)	(11)	(2)	(1)				
Career Development eManual University of Waterloo - <a href="http://www.cdm.uwaterloo.ca">www.cdm.uwaterloo.ca</a>	17	(13)	(2)	(1)	(1)				
National Occupational Classification System - <a href="http://www5.hrsdc.gc.ca">www5.hrsdc.gc.ca</a>	25	(16)	(3)	(4)	(2)				
CanLearn - <a href="http://www.canlearn.ca">www.canlearn.ca</a>	32	(17)	(8)	(5)	(2)				
Job Futures - <a href="http://www.jobfutures.ca">www.jobfutures.ca</a>	51	(29)	(9)	(10)	(2)	(1)			
Local Education Institutions	23	(8)	(5)	(3)	(2)	(5)			
Career Decision-making Binder (Employment Resource Centre)	45	(21)	(7)	(6)	(5)	(2)	(2)	(1)	(1)
Other Resources in the Resource Centre	20	(8)	(5)	(5)	(1)	(1)			
Other Resources outside the Resource Centre (please tell us which ones)	19	(7)	(4)	(2)	(2)	(2)	(1)	(1)	

Resource	Freq. n = 76	Number of times accessed (Frequency = number of clients)							
		1	2	3	4	5	7	8	
Friends	47	(18)	(7)	(9)	(3)	(6)	(3)	(1)	
Prospective Employers	22	(5)	(7)	(4)	(2)	(2)	(2)		
Family Members	21	(21)	(7)	(4)	(3)	(2)	(3)	(1)	
Information Interviews	14	(8)	(1)	(2)	(2)	(1)			
Past Employers	22	(10)	(7)	(2)	(1)	(1)	(1)		
Referrals from any of the above to a source of information or a prospect for work	10	(8)	(1)	(1)					
Other	19	(6)	(6)	(1)	(2)	(1)	(1)	(2)	

Any other sources of help or support or information you used?	Freq. n = 76	Number of times accessed (Frequency = number of clients)							
Newspapers	1	5 (1)							
Student Loans Info	1	2 (1)							
Indeed.ca	2	5 (1)	9 (1)						
Regina Job Shop.ca	1	2 (1)							
Service Canada.gc.ca	1	2 (1)							
Resource Centre Staff	1	2 (1)							
Aaa.org	1	1 (1)							
laap.org	1	1 (1)							
Deskdemon.com	1	1 (1)							
Sastoonjobshop.ca	2	2 (1)	6 (1)						
Saskatoon Kijiji	1	6 (1)							
School Information Websites (Universities, colleges etc)	6	1 (1)	3 (1)	4 (2)	5 (1)	8 (1)			
Monster.ca	2	1 (1)	5 (1)						
e-resumes.com	1	1 (1)							
Job.gc.ca	1	7 (1)							
Quintcareers.com	1	1 (1)							
Careers.gov.sk.ca	1	3 (1)							
SAIT	1	5 (1)							
Employment Agencies	1	1 (1)							
Career Beacon	2	1 (1)	5 (1)						
Workopolis	1	1 (1)							
Eluta.ca	1	2 (1)							
Kijiji	1	2 (1)							
Prince Albert Job Search	1	1 (1)							
NBCC Website	1	1 (1)							

## Annex H

### Job Search Client Tracking Sheet

**Client Tracking Sheet:** Please help us by keeping track of what resources (information and people) you used to help you with your career/employment goals throughout the research project. You will be asked for this sheet at the end of the study. Many thanks in advance!

**CLIENT NAME:** \_\_\_\_\_

<b>Put a check mark beside any information resource you used. Put a checkmark for each time you used it</b>	✓✓ ✓
Saskjobs - <a href="http://www.saskjobs.ca">www.saskjobs.ca</a>	
Career Beacon - <a href="http://www.careerbeacon.com">www.careerbeacon.com</a>	
Monster - <a href="http://www.monster.ca">www.monster.ca</a>	
Career Cruising - <a href="http://www.careercruising.com">www.careercruising.com</a>	
WinWay - <a href="http://www.winway.com">www.winway.com</a>	
Job Bank - <a href="http://www.jobbank.gc.ca">www.jobbank.gc.ca</a>	
Career Owl - <a href="http://www.careerowlresources.ca">www.careerowlresources.ca</a>	
Career Builder - <a href="http://www.careerbuilder.ca">www.careerbuilder.ca</a>	
Missouri Career Options Project - <a href="http://www.missouribusiness.net/career">www.missouribusiness.net/career</a>	
About.com - <a href="http://www.jobsearch.about.com">www.jobsearch.about.com</a>	
Government of Canada LMI - <a href="http://www.labourmarketinformation.ca">www.labourmarketinformation.ca</a>	
BC Jobs - <a href="http://www.bcjobs.ca">www.bcjobs.ca</a>	
Job Search Binder (Employment Resource Centre)	
Other Resources in the Resource Centre	
Other Resources outside the Resource Centre (please tell us which ones on the back of the form)	
<b>Put a check mark beside the kind of person you contacted for any aspect of your career/ employment goal. Put a check mark for each time you connected with someone around your career/employment goal. Please also give us a 3-4 word description of the topic(s) discussed.</b>	✓✓ ✓
Friends	
Prospective Employers	
Family Members	
Information Interviews	
Past Employers	
Referrals from any of the above to a source of information or a prospect for work	

Other	
<b>Any other sources of help or support or information you used? If yes, please indicate below what or whom. Put a check mark for each time you used these sources</b>	✓✓ ✓

<b>Put a brief description of any other sources of help in the boxes below</b>

## Job Search Tracking Sheet Summary of Results

**Client Tracking Sheet: Please help us by keeping track of what resources (information and people) you used to help you with your career/employment goals throughout the research project. You will be asked for this sheet at the end of the study. Many thanks in advance!**

**CLIENT NAME:** \_\_\_\_\_

Resource	Freq. n = 69	Number of times accessed (Frequency = number of clients)							
		1-5	6-12	13-26	27-32	33-40	41-50	51-60	61+
Saskjobs - <a href="http://www.saskjobs.ca">www.saskjobs.ca</a>	44	1-5 (19)	7-13 (12)	14-25 (7)	26+ (6)				
Career Beacon - <a href="http://www.careerbeacon.com">www.careerbeacon.com</a>	33	1-5 (22)	6-12 (6)	13-26 (5)					
Monster - <a href="http://www.monster.ca">www.monster.ca</a>	45	1-5 (39)	7-15 (4)	16-23 (2)					
Career Cruising - <a href="http://www.careercruising.com">www.careercruising.com</a>	33	1 (20)	2 (5)	3 (5)	5 (2)	7 (1)			
WinWay - <a href="http://www.winway.com">www.winway.com</a>	25	1 (16)	2 (4)	3 (1)	4 (1)	5 (1)	7 (1)	16 (1)	
Job Bank - <a href="http://www.jobbank.gc.ca">www.jobbank.gc.ca</a>	60	1-5 (41)	6-20 (14)	21-28 (5)					
Career Owl - <a href="http://www.careerowlresources.ca">www.careerowlresources.ca</a>	33	1 (25)	2 (4)	5 (2)	6 (1)	7 (1)			
Career Builder - <a href="http://www.careerbuilder.ca">www.careerbuilder.ca</a>	24	1 (11)	2 (5)	3 (1)	4 (1)	5 (3)	6 (2)	17 (1)	
Missouri Career Options Project - <a href="http://www.missouribusiness.net/career">www.missouribusiness.net/career</a>	16	1 (13)	2 (2)	3 (1)					
About.com - <a href="http://www.jobsearch.about.com">www.jobsearch.about.com</a>	22	1 (11)	2 (6)	3 (1)	5 (1)	9 (2)	10 (1)		
Government of Canada LMI - <a href="http://www.labourmarketinformation.ca">www.labourmarketinformation.ca</a>	28	1 (12)	2 (7)	3 (2)	4 (3)	5 (2)	6 (1)	7 (1)	
BC Jobs - <a href="http://www.bcjobs.ca">www.bcjobs.ca</a>	14	1 (9)	2 (2)	3 (1)	4 (1)	9 (1)			
Job Search Binder (Employment Resource Centre)	28	1 (12)	2 (3)	3 (3)	4 (3)	5 (3)	6 (1)	7-11 (3)	
Other Resources in the Resource Centre	28	1 (14)	2 (5)	3 (2)	4 (1)	5 (1)	6 (3)	10 (1)	20 (1)
Other Resources outside the Resource Centre (please tell us which ones on the back of the form)	15	1 (7)	2 (1)	3 (2)	4 (1)	6 (1)	9 (1)	10 (1)	21 (1)

Resource	Freq. n = 69	Number of times accessed (Frequency = number of clients)							
		1	2	3	4	5	6	7	8-10
Friends	42	1 (13)	2 (10)	3 (6)	4 (3)	5 (5)	6 (1)	7 (1)	9-10 (3)
Prospective Employers	43	1 (16)	2 (6)	3 (4)	4 (6)	5 (4)	6 (2)	7 (2)	9-32 (3)
Family Members	30	1 (14)	2 (9)	3 (3)	5 (2)	6 (1)	9 (1)		
Information Interviews	13	1 (10)	2 (2)	5 (1)					
Past Employers	23	1 (11)	2 (6)	3 (4)	4 (1)	5 (1)			
Referrals from any of the above to a source of information or a prospect for work	10	1 (4)	2 (3)	3 (2)	5 (1)				
Other	19	1 (7)	2 (4)	4 (1)	5 (3)	8 (1)	16 (1)	19 (1)	28 (1)

Any other sources of help or support or information you used?	Freq. n = 69	Number of times accessed (Frequency = number of clients)							
SIIT Employment Coordinator	2	1 (2)							
Newspapers	11	1 (5)	2 (2)	4 (1)	5 (2)	8 (1)			
Going into a Business	1	1 (1)							
Cold Calling Businesses	4	1 (2)	3 (1)	4 (1)					
Google	2	1 (1)	2 (1)						
Resume.ca	1	1 (1)							
Ponjo.ca	1	1 (1)							
Employment Books	1	1 (1)							
Networking	1	13 (1)							
City of Regina Centre	1	1 (1)							
Matchview.ca	1	1 (1)							
Indeed.ca	3	1 (3)							
Wow.com	1	1 (1)							
Church Newsletter	1	1 (1)							
Phone Book	2	2 (1)	5 (1)						
Regina Job Shop	2	4 (1)	25 (1)						
Employer Website	7	2 (2)	3 (1)	5 (1)	6 (1)	7 (1)	21 (1)		
Workpolis	4	1 (2)	2 (1)	11 (1)					
Kijiji	7	1 (1)	2 (1)	4 (1)	6 (1)	8 (1)	9 (1)	11 (1)	
Eluta.ca	2	3 (1)	5 (1)						
CanSask	1	7 (1)							
Careers.gov.sk.ca	1	2 (1)							
Saskatoon Job Shop	1	2 (1)							
School Information	4	1 (3)	7 (1)						
Simply Hired.com	1	9 (1)							
Careerjet.ca	1	7 (1)							
Working.com	2	2 (1)	3 (1)						

Star Phoenix	1	1 (1)							
Helping Hands Org	1	1 (1)							
Psc.gov.sl.ca	1	10 (1)							
JobsOpen.ca	1	11 (1)							
MacMoneyJobs.com	1	9 (1)							
Tasmiramichi.com	1	11 (1)							
Bridges	1	2 (1)							
New Brunswick Job Shop	1	9 (1)							
MSN Jobs	1	2 (1)							
Leaderpost	2	1 (1)	10 (1)						
Service Canada	1	5 (1)							