ARTICLES

USE OF A CONCEPTUAL FRAMEWORK TO EXPLORE MULTIPLE INFLUENCES ON THE APPLICATION OF LEARNING FOLLOWING A CONTINUING EDUCATION PROGRAM[1]

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Abstract

The Application Process Framework is introduced and used to explore multiple influences on the application of learning three months after a continuing education program. The framework guided development of pre, post, and follow-up questionnaires which were used to collect data on direct and indirect influences on application. The interwoven relationship of multiple influences on application is discussed. Further rigorous testing of the framework with a larger sample is needed.

Résumé

Un cadre est proposé pour explorer les facteurs agissant sur l'application des apprentissages trois mois après le terme d'un programme d'éducation permanente. Ce cadre a par ailleurs servi à élaborer des questionnaires portant sur les facteurs d'influence directs et indirects ayant eu cours avant, durant et après la durée des programmes. La trame complexe des relations et influences entre les divers facteurs fait ensuite l'objet d'une analyse. Pour des résultats plus concluants, une expérimentation plus rigoureuse auprès d'un échantillon plus important serait requise.

What hath policy wrought? Having tasted of the fruit of the tree of knowledge, the implementer can only answer, and with conviction, it depends... (Pressman & Wildavsky, 1979).

Background

This exploratory study asks an adult education corollary to the policy question posed above: "What hath continuing education wrought?" Adult educators rarely get a chance to answer that question about short-term workshops beyond immediate in-class effects. Most often they lack access to information about whether and how learning is applied after adult education programs. With application out of sight, some educators also put it out of mind. Application is left to learners to figure out later. Other adult educators plan for and deliver short-

term educational programs as though their efforts alone were sufficient to enable postworkshop application by participants. These educators may be lured into such perspectives by "happy sheet" evaluations conducted at the end of a workshop. These evaluations, often full of praise and participants' intentions to apply their learning, are the last substantive comments which educators can use to trace the application of learning.

In contrast, this article seeks to illuminate multiple influences on the application of learning following a 2-day continuing education workshop. The university sponsored workshop was held at a nonwork location. It attracted multidisciplinary health professionals engaged in health education from a variety of hospital, community, volunteer agency, and private practice settings. The workshop presented a planning and evaluation model widely used in health education. The credible and seasoned instructors who taught the model during the workshop were also its developers. Multiple methods were used to facilitate understanding of the model including lecture, audio visuals, practical examples, and small group discussions. During the workshop, application was further facilitated by case studies and small group discussions of participants working in similar contexts, such as community agencies or hospitals. The overall intent of the workshop planners was for participants to return to their varied worksites and apply the planning model.

On end-of-workshop questionnaires, respondents' intent to apply the model appeared to match that of workshop planners. Nearly all indicated they were likely or very likely to apply the model. They indicated an increase in knowledge about the model and gave the workshop and the planning model high ratings on multiple criteria. Few identified barriers to intended application of the model. This is the point where evaluation of most short-term adult education programs halts: with such glowing praise and promise at the end of the workshop, why mess with success? This workshop, however, was intentionally designed to meet the planning and evaluation needs of professionals engaged in health education on-the-job. Therefore, it was essential that workshop effects be analyzed not only in terms of satisfaction and intention at the end of the workshop, but in terms of actual application following the workshop. In this study, a look beyond the workshop door after three months revealed relatively little application by most participants and no application by some. What influences turned participant intent to apply the model at the end of the workshop into so little application following the workshop?

This study posits that the answer lies in the interrelationship of multiple influences on the application of learning. It is not just the characteristics of the educational program, such as the one described above, but characteristics of the learner and the context of application that together influence whether and how learning is applied. To investigate these multiple influences, literature on application related processes was reviewed to identify broad factors and specific variables influencing application and to develop a working definition of **application**. The factors and variables identified in the literature review were used to adapt a conceptual framework to guide data collection and analysis. Data

were analyzed for their direct and indirect influences on the application of learning and implications for adult education research and practice.

Literature Review

Various literature contributes to an understanding of practical, tangible manifestations of learning following adult and continuing education; these include the literature on transfer, diffusion, and implementation. All focus on processes in which learning crosses either boundaries and contexts (e.g., from education to work sites), or form (e.g., from ideas or policy to action). This literature was reviewed for its relevance to this study, in which not only do educational and application contexts differ from each other, but there are nearly as many application contexts as there are participants. Further, participants represent the traditions and training of multiple professional cultures and the model to be applied is conceptual rather than a psychomotor skill.

The transfer of training literature draws from psychology and is concerned with the influence of prior learning on later learning or performance. Variables drawn from this literature as important to the movement of learning from educational to work contexts include: characteristics of the educational program (such as content, resource materials, and amount of practice time), knowledge about what is to be transferred, capacity to transfer, supervisor and peer responses, and opportunity for transfer (Annett & Sparrow, 1985; Drukman & Bjork, 1991). The emphasis in this literature on the match between training and application contexts and the transfer of psychomotor skills, limits it own transfer to this study. Further, a more eclectic approach to studying transfer is needed (Baldwin & Ford, 1988).

The diffusion literature examines how an innovation is communicated over time among members of a social system (Rogers, 1983). An innovation is the cluster of ideas, skills, or technology taught in the educational program. In this study, the innovation is a planning and evaluation model. The adoption, adaptation, or rejection of an innovation is determined not just by the nature of the innovation, but by its cultural context. "The acceptance of an element by a receiving culture will depend on the usefulness of the element to that culture and its compatibility with the existing cultural configuration" (Verner, 1970, p. 27). Variables drawn from this literature which inform application include: characteristics of the innovation (such as usefulness and adaptability), culture of the diffusion context, and intentions of the learner. The multiple professional cultures and organizational systems of participants in this study complicate analysis solely from the diffusion perspective.

The implementation literature draws on political science and sociology to focus on contextual factors that influence manifestations of learning, including organizational structures, sources and distribution of power, and resource distribution. An issue of central concern in implementation are the trade-offs between fidelity to the ideas of policy or programs and the realities of local context.

Variables drawn from this literature which inform the study of application include: authority of the learner's job or position, access to resources, organizational culture, timing or opportunity for implementation, adaptability of what is to be implemented, and support from others. From an implementation perspective, there is no wholesale transfer of learning; rather, there are multiple negotiations among the ideas of learning, the actions of practice, diverse actors, and a wide range of contextual influences (Orlandi, 1986; Ottoson & Green, 1987; Palumbo & Calista, 1987; Weiss, 1980).

These varied concepts of transfer, diffusion, and implementation are drawn from multiple disciplines and analyze different variables, processes, and outcomes. No one process captures a whole or universal reality of potential influences on the postadult education experience. Taken together, however, these processes suggest several broad influences including the educational program, learner, context, and the innovation to be applied. Rather than invent a new word to encompass this broader perspective, this study will use the term application, as an umbrella term to cover the multiple ways in which learning is made active or practical in intended contexts. To apply something is defined either as to "put a thing into practical contact with another" or to "bring oneself into close practical contact with a pursuit" (Simpson & Weiner, 1989). Any assumption that putting knowledge into practical contact is an inherently functional, rational, and controlled process is a denial of the fluid, political, messy contexts of practice (Cervero, 1988; Fullan, 1991; Schön, 1983).

While the literature review has been helpful in identifying broad and specific influences on application, a conceptual framework is needed to capture these for an exploratory study of their interactions during application.

Conceptual Framework

After reviewing several conceptual frameworks useful to a holistic understanding of the postadult education experience (Cervero, Rottet, & Dimmock, 1986; Hall & Hord, 1987), this study adapted the PRECEDE[2] Framework (Green et al., 1980). This framework is similar to the adapted Application Process Framework presented in Figure 1.

Before explaining adaptations, a brief summary of the original Framework is offered. The PRECEDE Framework focuses on health behavior, instead of application, as this behavior relates to health and quality of life. It examines four broad influences on health behavior:

1.   *Educational Program Factor*, e.g., structural and process characteristics of the program.

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[2]   Predisposing, reinforcing, and enabling causes in educational diagnosis and evaluation.

2. ***Predisposing Factor***, e.g., learner knowledge, attitudes, values, and beliefs.
3. ***Enabling Factor***, e.g., learner skills and contextual characteristics such as resources.
4. ***Reinforcing Factor***, e.g., support from others for intended actions.

Rooted in practice, the Framework begins the planning process on the right side of the diagram and works backward through multiple layers of influences to development of the educational program. This ends the planning process. Implementation of the program engages the evaluation process which the Framework follows forward from left to right across the diagram. More information on the original Framework can be pursued through two published texts and over 400 separate published applications (Green & Kreuter, 1991).
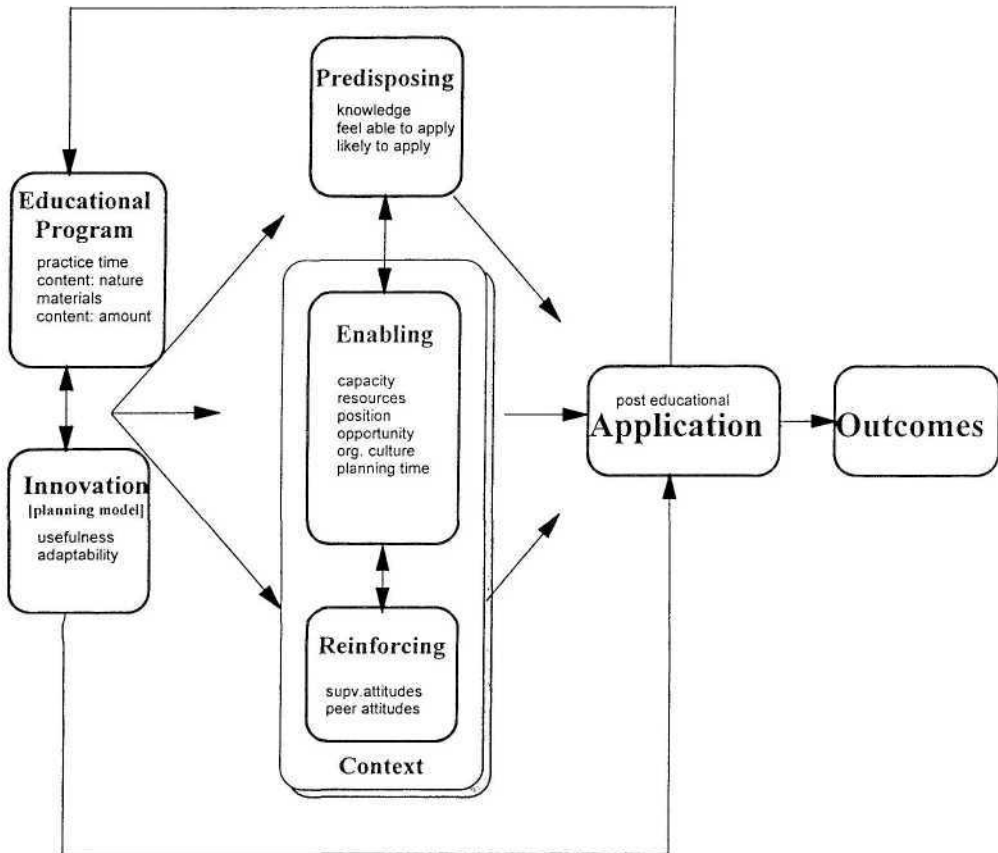
Figure 1. Application Process Framework.   As adapted from the PRECEDE Framework, this Framework shows 5 factors influencing application: Educational Program, Innovation, Predisposing, Enabling, and Reinforcing Factors. Each factor is operationalized with variables drawn from the literature.

The original framework was adapted in four ways (Ottoson, 1992). First, an *Innovation Factor* was added based on the diffusion literature. It is anticipated that what is applied influences whether and how application occurs. The objective nature of the innovation directly influences application; the subjective perception of the innovation indirectly influences application through other factors. Second, the Enabling and Reinforcing Factors were embedded in the intended context of application rather than separated from it, as in the original model. These two factors identify the salient contextual and support influences on application for a given context. The adapted model acknowledges the broader context of influences in which these more specific influences are enmeshed, but does not pursue measurement of these influences in this study. Third, the dependent variable is application, not health behavior as in the original model. Like health behavior, application is understood to be a conscious act. Fourth, postworkshop application is connected to the educational program through a feedback loop that suggests information about application can be useful to program planning and implementation.

For the purposes of this study, the dependent variable, application, was a self-assessed measurement 3 months following the workshop by which participants indicated the extent to which they had applied the planning model since attending the 2-day workshop. Each of the 5 factors in the adapted framework was operationalized with influences (independent variables) associated with application as raised by the literature review. These 17 variables are discussed below and highlighted in the foregoing Figure 1.

The Educational Program Factor is seen to have an indirect influence on application through Predisposing, Enabling, and Reinforcing Factors. Educational influences examined in this study include:
1. amount of practice time during the workshop.
2. nature of educational content (basic vs. theoretical).
3. usefulness of workshop materials to learners.
4. amount of educational content (too much vs. too little).

The Innovation Factor has both a direct and indirect relationship between the innovation to be applied and application. In this study, the innovation under investigation is a planning model. Influences explored included learner perception of innovation:
5. usefulness.
6. adaptability.

The Predisposing Factor is seen to have a direct influence on application by those influences that predispose the learner to act. Such influences used in this study include:
7. self-assessed knowledge about the innovation.
8. "feel able to apply" the innovation.
9. "likely to apply" the innovation.

The Enabling Factor has a direct influence on application. It includes influences that facilitate or equip the learner for application:
10. learner "capacity to apply" the innovation.
11. resources available to support application.
12. learner position in an employing organization.
13. opportunity for application.
14. organizational culture of the learner's workplace.
15. amount of planning time (planning time is specific to this study in that the innovation to be applied is a planning model.

The Reinforcing Factor is seen to have a direct influence on application; it encompasses external support to the learner for application. Influences analyzed in this study include the learner's perception of his or her:
16. supervisors's attitude towards application.
17. attitude of peers.

Methodology

The conceptual framework guided development of questionnaires that were administered to participants in a 2-day continuing education workshop (N=98 registered participants). Among pre (n=78), post (n=80), and follow-up (n=45) questionnaires returned, there were 50 matched sets of pre and postdata and 34 matched sets of pre, post, and follow-up data. The 34 matched respondents at follow-up were not significantly different from the larger matched population on any of the independent or demographic variables used in this study. Nonetheless, they represent less than half of all participants and the likelihood of some form of nonresponse bias is acknowledged.

The independent variable, application, and dependent variables in the Innovation and Predisposing Factors were assessed on 5-point Likert Scales on the post questionnaire. Variables in the Enabling, Reinforcing, and Educational Factors, however, were classified on the same questionnaire. Enabling and Reinforcing variables were classified as "facilitators" or "barriers" to application; the Educational variables were classified as "on target," "too much," or "too little." On pre and follow-up questionnaires, all variables were assessed on 5-point Likert Scales with "1" and "5" as low and high ratings respectively.

The intent of this exploratory study was not to predict application but to "...[pin] down just what joint action of situational variables produces a particular effect" (Cronbach, 1975, p. 124). Pearson correlation tests were used for analysis with all variables measured on Likert Scales; biserial correlations were used between dichotomous and interval variables. The level of significance was set at $p < .05$.

Two levels of bivariate analyses were conducted. The first level involved analysis between the dependent variable, application, and all independent variables at pre, post, and follow-up. The intent of this analysis was to identify direct associations with application. The second level of analysis was conducted between variables in

one factor and variables in all other factors in the conceptual framework, e.g., Predisposing variables with all Educational, Innovation, Enabling, and Reinforcing variables. The intent of this level of analysis was to identify potential indirect associations with application that might be useful to future explorations with more powerful analyses with a larger sample.

The key limitation to the study is the low follow-up response rate. Also, the dependent variable would be strengthened by a composite measure of the multifaceted phenomenon of application rather than a single measure. Finally, it is unclear how time influences application and whether 3 months following the workshop was sufficient time to find evidence of application.

Results

Data from the first level of analyses are presented in Figure 2 and data from the second level of analyses are presented in Tables 1-3 which were organized to prevent duplication of findings. The correlations presented in this figures and these tables indicate the extent to which a high rating on one variable was associated with a high rating on another. Significant relationships among variables within a single factor is shown only for the Predisposing Factor, in Table 1, because of data organization. Significant within-factor relationships were not repeated for all factors because they are expected.

The exploratory nature of this study makes the nonsignificant findings as potentially useful to further explorations as the significant findings. In the interest of brevity, however, nonsignificant findings are included only for those variables that had some significant associations with other variables in any given table. For example, in Table 1, nonsignificant findings were included for only 4 of 6 Enabling Factor variables which had significant relationships with Predisposing variables. Resources and planning time variables are not included in Table 1 because they had no significant relationship with any Predisposing variables. The reader may wish to refer to Figure 1 when following the Results section. The discussion which follows is organized around levels of analyses and observations that cut across all results.

Relationships Between Independent Variables and Application

Among correlations conducted between application at 3 months *postworkshop* (dependent variable) with all independent variables previously measured at the immediate end of the workshop (post) and with all independent variables measured 3 months after the workshop (follow-up), only those correlations with a significant relationship are reported in Figure 2.

None of the Predisposing variables measured at the end of the workshop were subsequently found to be correlated directly with application 3 months after the workshop. Instead, direct relationships were found between variables in the Innovation, Enabling, and Reinforcing Factors and application. Three months after

the workshop, 2 of the 3 Predisposing variables now correlated with application; i.e., understanding the innovation and feeling able to apply it. The adaptability of the innovation continued to be correlated with application, along with the perceived usefulness of the innovation. The latter, which was not correlated at post, had the strongest direct correlation with application of all independent variables. From the Enabling and Reinforcing Factors, the learner's position in his or her organization, the opportunity for application, and the supervisor's perceived level of support continued to be directly correlated with application. None of the Educational Program variables had a direct, significant correlation with application at either post or follow-up.

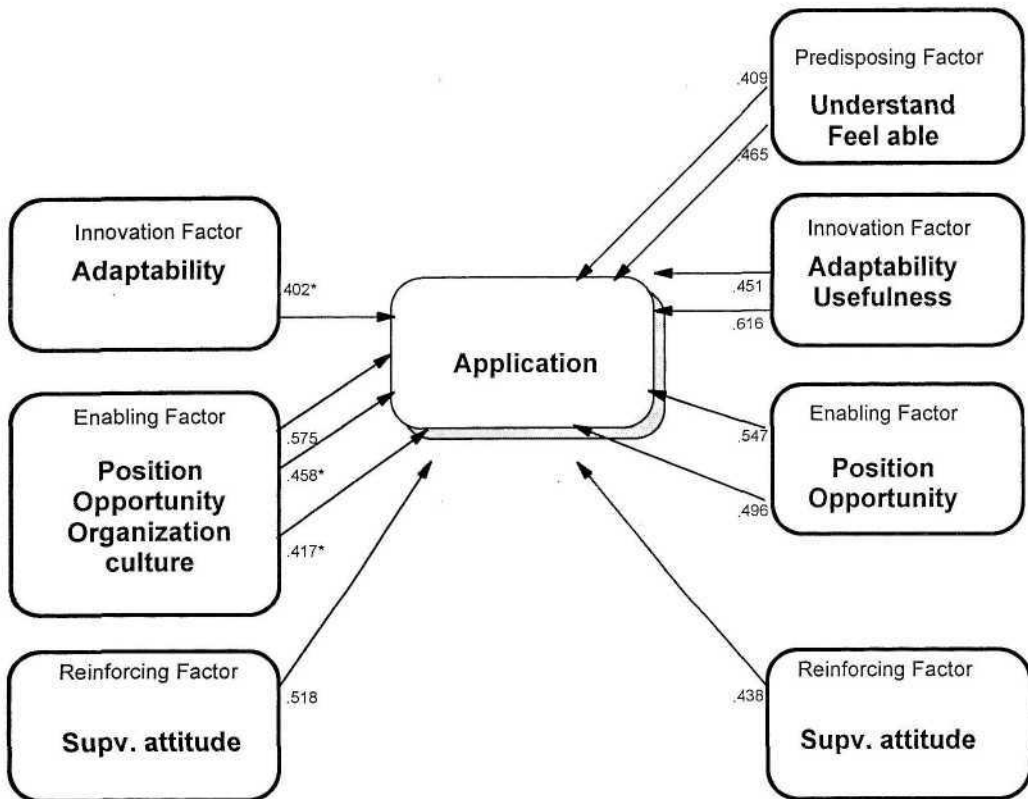Post Workshop   3 Month Follow-up

Figure 2. Direct Influences on the Application of Learning Following a Two-day Continuing Education Workshop.

* p<.05; others p<.01

Relationships Between Independent Variables

The web of direct associations with application found in Figure 2 is expanded in Tables 1-3 through an exploration of possible indirect associations with application. These associations are not to be understood as effects; rather, as possible influences that need further testing. Rather than repeat the findings in the tables, this section offers general observations about all results.

Table 1

Correlation Coefficients Between Variables in the Predisposing Factor, and Between Variables in the Predisposing Factor and All Other Factors

		Predisposing Factor					
		Likely to apply	Feel able to apply		Understand innovation		
		Post n=78	Post n=78	FL n=34	Pre n=78	Post n=78	FL n=34
Predisposing							
Likely to apply		n/a	.437	.380*	-	-	-
Feel able to apply:	post	.437	n/a	.650	.413	.447	-
	fl	.380*	.650	n/a	.497	-	.535
Enabling							
Capacity:	fl	-	-	.439	-	-	.428
Position:	post	.396	.338*	.425*	-	-	-
	fl	.399*	-	.545	-	-	-
Opportunity:	post	.441	.309*	.458*	-	-	-
	fl	-	-	.400*	-	-	-
Org. Culture:	fl	-	-	.474	-	-	-
Reinforcing							
Supervisor:	post	.398	-	.515	.372*	-	.401*
Innovation							
Useful:	post	.686	.384	-	-	.222*	-
	fl	.434	.395*	.605	.385*	-	-
Adaptable:	post	.544	-	-	-	-	-
	fl	.366*	.458	.753	.475	-	.407
Education							
Practice time		-	.286	-	-	.305	-

*p<.05; others p<.01

Table 2

Correlation Coefficients Between Variables in the Innovation, Enabling, Reinforcing, and Educational Factors

		Innovation Usefulness		Innovation Adaptability		Enabling Capacity	
		Post	FL	Post	FL	Post	FL
Enabling							
Capacity:	fl	-	-	-	.390*	-	-
Opportunity:	post	-	.659	-	.708	-	-
	fl	-	.484	-	.575	-	-
Org. Culture:	post						
	fl	-	.461	-	.502	-	-
Resources:	fl	-	-	.361*	.404*	.376*	.532
Plan Time:	fl	-	-	-	-	.532	.513
Position:	post	-	-	-	-	-	.495
	fl	-	.634	-	.589	-	-
		-	.485	-	.609	-	.404*
Reinforcing							
Supervisor:	post	.278*	.669	.365	.638	-	-
	fl	-	-	.393	-	-	-
Peers	fl	-	-	-	-	.338*	.383*
Education							
Content: amt.		-	-	-	-	.250*	-
Content: nature		.240*	-	-	.360*	.317	-
Materials		-	-	-	-	.230*	-

*p<.05; others p<.01

Table 3

Correlation Coefficients Between Variables in the Enabling, Reinforcing, and Educational Factors

| | Enabling Factor | | | | | | | | | | |
| | Capacity | | Opportunity | | Org. Culture | | Resources | | Plan Time | | Position | |
	Post	FL	Post	FL	Post	FL	Post	FL	Post	FL	Post	FL
Reinforce												
Supv:												
post	-	-	.318*	.467*	.431	-	-	-	-	-	-	-
fl	-	-	-	.539	-	.596	-	.478	-	.566	-	.591
Peers												
post	.388*	-	-	-	.413	-	-	.588	-	-	-	-
fl	.383*	-	-	.437	.413	.592	-	.511	-	.513	-	.466
Education												
Practice	-	-	-	-	-	.436	-	-	-	-	-	-

* p<.05; others p<.01

First, potential influences on application cut across multiple factors. For example, "feel able to apply" slices across Predisposing, Enabling, Reinforcing, Innovation, and Educational Program Factors in the third and fourth columns in Table 1. The extent to which learners in the workshop felt able to apply the Innovation was directly associated with their understanding of the Innovation and likely application, Enabling, and Reinforcing characteristics of the application environment, perception of the Innovation usefulness and adaptability, and the amount of practice time during the Educational Program. This finding suggests the multidimensional nature of potential influences on application, many of which lay beyond the direct influence of education.

Second, influences on application may change over time. For example, Table 2 shows no correlations between Enabling variables and Innovation usefulness at the end of the workshop and only one correlation with Innovation adaptability. At 3 months after the workshop, nearly all Enabling variables were correlated with Innovation usefulness and adaptability. This type of change over time is also revealed in Table 3 where there were few correlations at the end of the workshop between Enabling and Reinforcing variables, but more associations at 3 months after the workshop. Although any

interpretation of these findings needs to be tempered by the low response rate, they suggest that different influences may affect application after a workshop than those perceived by learners during the workshop.

Third, the type of associations and their strength vary among potential influences on application. For example in Table 1, variables in the Innovation Factor were significantly associated with Predisposing variables, while no correlations were found between the participants' understanding of the Innovation and characteristics of the application environment, such as position, opportunity, and organizational culture. The correlations that were found presented a few surprises for this researcher. For example, despite previous experiences with postworkshop interviews in which respondents identified lack of resources as major barriers to application, no variables at the end of this workshop and few variables at 3 months correlated with availability of resources. Further, findings include variations in the strength of relationships among influences on application. Among the weak correlations were those in the Educational Factor; the strongest correlation was found between feeling able to apply the Innovation 3 months after the workshop and the perception of Innovation adaptability.

Fourth, there are evident interrelationships among variables influencing application. To explore these relationships, for example, adult educators may wish to start with the Educational Program variables in Table 1. Of the 4 Educational variables tested, only practice time was found to be significantly correlated with Predisposing variables; i.e., postworkshop understanding of the Innovation and feeling able to apply it. Postworkshop understanding was, in turn, correlated with likely application at the end of the workshop, which, in turn, correlated with postworkshop perception of Innovation adaptability, which, in turn, correlated significantly with postworkshop application. Clearly, correlations do not confirm a causal chain. They can, however, illuminate interrelationships which suggest further study with more sophisticated analytic models and a larger sample size.

Discussion and Implications For Practice

The overarching finding of this study is that application of learning following adult and continuing education programs depends on multiple, varied, and interacting influences. It is likely that it is not just the educational program; it is not just the innovation; it is not just the learner; it is not just the context that makes a difference in whether and how application occurs. There is likely no single strand to follow towards application; instead, there is a web of influences whose interaction shapes application.

This is not a satisfactory finding to anyone bent on predicting application. It is also not a very satisfactory finding to those who hold that one of these

influences is the overriding explanation of all others. The author's own bias that Enabling and Reinforcing Factors are primary influences on application was challenged by the role of the Predisposing Factor. Others will have their own assumptions about predominant influences on application. Such assumptions lead to requests for more information about the educational program, *or* more explanation about the innovation, *or* development of a theory of context. Each request leads with the assumption that more information on that one factor alone explains application.

The central finding of this study supports the literature review on the complexities of transferring, diffusing, implementing, and applying ideas in practical contexts. Whatever illusions of control we may have in planning adult education programs (Sork, 1990) will probably be shattered in the complex, uncertain, fluid contexts of application. Research designs and methods that strip away this rich understanding of interrelationships leave us inadequately informed about the nature of application. Considering the interweaving of influences on application, it is less surprising how little application occurs and more surprising that, like implementation, any application occurs at all (Pressman & Wildavsky, 1979).

On the basis of this first exploratory study, what suggestions can be offered for the adult educator wishing to make sense of the web of possible influences on application? One way to start is with an understanding of the characteristics of these multiple influences in light of adult education practice. Some influences on application are likely to be direct and others indirect. In this study, characteristics of learners, application contexts, and the innovation have direct influences on application; educational influences were indirect. The conceptual framework used posits an indirect relationship between education and application and the analysis suggests that is likely to be the case in this study. The multiplicity of influences indicates the need for educators to collaborate with learners and varied program sponsors to predispose, enable, and reinforce application.

The influences on application are more than multiple; they vary. They come from characteristics of the learner, the context of application, the nature of the innovation, and the educational program. Settling all our eggs in the educational basket means other sources of influence on application are not carried forward. Contextual eggs are particularly difficult to find and fragile to settle in educational planning. Adult educators cannot possibly know or assess multiple contexts of all learners in workshops, such as the one in this study. To understand influences on application, therefore, means engaging, listening to, and providing practice opportunities for learners to "put a thing into practical contact" during educational programs. The educators in the workshop studied did this, yet it is evident that practice time alone–just as any influence alone–is not sufficient to support application. Adult educators need to approach application from as many varied sources as there are influences upon it.

Influences change over time and probably among applications. For example, the post to follow-up changes in correlations between characteristics of the Innovation and characteristics of the application context. During an adult education program, learner perception of application after the educational program may be blurred or limited. Educators have a role to play in extending the vision of learners beyond the immediate educational experience to the eventual context of application. To increase the prospects for successful application, learners' knowledge about context must be brought directly to bear on the ideas intended for application.

Influences on application are multidimensional. For example, the learners' rating of their ability to apply the innovation cuts across multiple factors in the conceptual framework, as well as multiple variables in the same factor. It is not just what learners know and feel at the end of the workshop that affects application. It is also Enabling and Reinforcing influences of the context of application, as well as characteristics of the innovation itself that influence application. For these reasons, application requires more than a map of the psychological and sociological territories in adult education (Rubenson, 1982). Political, economic, philosophical, technical, and cultural maps are also required.

Some influences on application appear to be pivotal mediators of other influences. The learner's position in an employing organization, for example, was significantly associated at some point in time with every factor in the framework, except the educational program. The learner's current job is not a minor demographic variable to collect on registration forms, but is a pivotal mediator of multiple influences on application. This kind of information about adult learners should be gathered in program planning and used as a test of potential application during educational programs.

Application involves other people and negotiation. The increased recognition of the role of peers from post to follow-up gives evidence of this, as does the supervisor's attitude as facilitative to application postworkshop. Other people lend to the need for negotiation skills as an innovation is put into practical *contact*. Evidence about the need for negotiation during application is found in ratings of innovation adaptability. At the end of the workshop, participants did not link any of the Enabling variables to innovation adaptability, yet 3 were significantly associated by follow-up. Feeling able to apply the innovation and adaptability of the innovation as perceived at the time of the follow-up produced the strongest bivariate correlation in the study. The work of application is less related to wholesale transfer of learning and more related to multiple negotiations and multiple and varied influences.

Conclusions

Although educators planning for adult education programs may feel reassuringly in control, ensuring application of learning from those programs is beyond their control. Neither the educator, nor the learner, nor the employer, solely controls the many influences on application. Instead, adult educators are part of a large web of influences on application. Since they do not control application, adult educators cannot be held solely accountable for either the success or failure of application from educational interventions. If adult educators intend learning to be applied, postworkshop happy sheet evaluations should be used to tell only part of the story. For the whole story, educators need to interact with the multiple sources of influence on application.

To help prepare learners, adult educators need a long and broad vision of the application process. It is a vision that extends beyond the door of any given workshop to the multiple contexts of, and multiple influences on, application. Providing continuing education participants with knowledge about an innovation without helping them consider implications for their own context taps only one of the direct influences on application, predisposition. Predisposing learners to apply an innovation may generate enthusiasm during continuing education and positive happy sheet evaluations, but leaves learners to be surprised or swamped by contextual variables back on the job.

When asked what adult and continuing education hath wrought, adult educators can only answer, and with conviction: "It depends." They can also help learners anticipate the contingencies ahead. Planning for educational programs needs to include as much attention to the context of application as it does the context of the institution sponsoring the program. Educators need to give priority attention to the skills of application:

1. critical thinking about bringing together the ideas of learning with the practical context.
2. negotiation skills to deal with multiple actors.
3. translation of language and ideas to different organizational and professional cultures and contexts.
4. identifying resources and sources of power to enable ideas to interact in the practical context.
5. identifying sources of personal support.
6. practising technical skills in environments of feedback.

All the multiple influences on application need to be attended, not just what is to be applied. Future research on application needs to include a comprehensive understanding of the processes by which ideas are brought into practical contact. The conceptual framework used in this study may prove useful to such a comprehensive understanding. Further refinement or redefinition of the variables used in this study will enable educators to better understand the comprehensive web of influences on the application of

learning. Future study of the multiple levels of interrelating variables can be tested with path analysis or LISERL with a larger sample size. A comprehensive understanding of application needs to be supported by a comprehensive approach to its realization. Application may be slippery, but for adult educators who intend that something happen beyond their well planned programs, application is where the rubber meets the road.

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