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An Evaluation of the Transtheoretical Model of Individual Change and its Implications for Human Resource Development

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Change is the basis for improving and expanding individual effectiveness, performance, and learning. Because HRD is multidisciplinary in nature, it is important for researchers and practitioners to consider individual change models/theories from other fields. The Transtheoretical Model is an influential health/medical change model that has promising utility in HRD. The purpose of this article is to introduce this model to HRD, evaluate it according to accepted HRD standards, and discuss its implications to HRD.

Keywords: Change, Transtheoretical Model, Individual Change

In human resource development (HRD), change is the basis for improving and expanding individual, group, and organizational effectiveness, performance, and learning. HRD utilizes a number of change models (e.g., Lewin's action research model and force field analysis, Shewhart's PDCA cycle, critical research, and organizational transformation) but has a limited history in specifically utilized or developed and empirically validated individual change models or theories. Because HRD is such a young field in terms of scholarship, this lack of individual change theory-building and research is understood by scholars. However, as this applied field matures the expectation of stronger and increased number of theoretical models arises for application in the workplace.

It is widely acknowledged that HRD is a field grounded in multiple theories (Ruona & Swanson, 1998). In fact, it often prides itself in its multidisciplinary nature, basing much of its theory, practice, and research on findings from education, psychology, economic, organizational behavior, management, and communication. However, one extensive body of knowledge HRD has only begun to explore is the health and medical field. One model from this field that has promising utility in HRD is the Transtheoretical Model (TTM) of individual change. The transtheoretical name came from the model's use of stages, processes, and principles of change across major theories of intervention (e.g., cognitive, motivational, social learning, relapse prevention) (Morera et al., 1998; Prochaska et al., 1997). This model is perhaps one of the most influential models in the area of health behavior change within the past 20 years (Block & Keller, 1998; Morera, Johnson, Freels, Parsons, Crittenden, Flay, & Warnecke, 1998). Because HRD focuses on effective change at both the individual and organizational levels, it is important for researchers and practitioners to continually seek more effective theories, models, methods, and interventions. TTM is a model worthy of further consideration in light of its promise of enhancing the individual change process.

Purpose

The purpose of this literature review is to introduce the TTM to the HRD field and evaluate this theoretical model according to accepted HRD standards. In addition, by suggesting future TTM research, this article is proposing another extension of the boundaries of this model into HRD theory and practice. The article focuses on four questions: 1) What is the background of the TTM? 2) What are the stages and processes of this model? 3) Does the TTM stand up to rigorous evaluation using Dubin's criteria for theory-building? 4) What are the HRD implications of this theoretical model?

Background of the Transtheoretical Model

Prochaska and colleagues studied the business of individual behavior change for more than two decades (Sullivan, 1998). The TTM of change first emerged from a comparative analysis of leading theories of psychotherapy and behavioral change primarily because Prochaska and his students were dissatisfied with the state of the field of psychotherapy (Mahalik, 1990). "The search was for a systematic integration in a field that had fragmented into more than three hundred theories of psychotherapy" (Prochaska et al., 1997, p. 60). They examined the 24 most popular theories of therapy and then identified the change processes which led to specifying the change processes of the TTM (Mahalik, 1990). As an example, during an empirical smoking cessation investigation, Prochaska and DiClemente (1984) focused on the processes that individuals used on their own to change their behavior. They

found that self-changers used various stages of change that were distinct yet related periods of time that appeared to be marked by different types of activities. Their continued research yielded only ten independent processes of individual change. These provided a starting point for developing and testing the TTM. At that time, they found that major systems of therapy (e.g., Client-Centered, Gestalt, Rational-Emotive, Existential) utilized only two or three of these processes (Mahalik, 1990). Further validating data on these processes have been and continue to be gathered.

The TTM has a history of rigorous empirical research and theory-building research. Researchers (e.g., Morera et al., 1998) have successfully utilized and validated the model for various populations. From the initial smoking cessation studies, the TTM rapidly expanded in scope to "include investigations and applications of a broad range of health and mental health behaviors" (Prochaska et al., 1997, p. 60). Many studies remained focused on deviant or troubled behaviors (e.g., alcohol addiction, eating disorders, drug abuse, and criminal domestic violence), but studies began to explore positive non-addictive changes for healthy individuals (e.g., participation in regular health-related screening and testing, improving nutrition, use of sunscreen, and exercise adoption).

Because of the model's success in non-addictive individual change, some management and organizational researchers began to consider its application to non-health related change in the workplace. So, in recent years, research utilizing the TTM has cautiously moved into individual and organizational change applications. Examples include changing physician behavior related to following recommended guidelines (Cohen, Halvorson, & Gosselink, 1994), effective management of change (Moulding, Silagy, & Weller, 1999), and organizational change (e.g., Prochaska, 2000). Other current research has included psychological skills training in intercollegiate athletes, experiential learning (Porter, 1999), and raising awareness of social issues.

One example of an HRD-related study is that of Prochaska (2000) who examined how well the transtheoretical model captured the dynamics of organizational change. She studied the total population of family service agencies in the U.S. who were changing counseling therapy to time-based. Using a cross-sectional design, the empirical relationships between TTM constructs were examined. A survey instrument was developed and validated. A series of "MANOVAs were run comparing groups representing five stages of change. Follow-up Tukey tests determined which specific stages differed from each other. Each of the study's dimensions was found to have systematic relationships predicted" by the TTM (p. 76) . Prochaska (2000) stated that the most important implication for theory is that the TTM "that has been widely tested with individuals is shown here to hold for organizations" (p. 82).

Even though much of the research on the TTM remains in the health-related field, there is evidence to show that this model could be applicable to HRD change interventions with employees, groups, and organizations in the work arena. Even though the previous example included research on organizational change, most research continues to focus at the individual level. Hence, this paper will focus specifically on individual change.

The TTM has been utilized as a theoretical framework for numerous research studies over the past few decades. The ProQuest Digital Dissertation database located the abstracts of over fifty dissertation research studies that utilized the TTM from 1989 through 1999, Block and Keller (1998) reviewed 25 studies of the TTM between 1990 and 1995, and, even though overlapping abstracts, the PsycINFO database found 256 published resources, with a substantial percentage reporting research studies. In addition, assessment and measurement instruments have been designed, withstood rigorous research, and been validated in many of these areas throughout the years (e.g., Batten, 1999; Glanz et al., 1997; Morera et al., 1998). Although the model received some criticism (e.g., Block & Keller, 1998) for utility problems with certain topics and in various arenas, the TTM continues to be widely used among researchers and practitioners in the health/medical field and now, as explained previously, is being studied and utilized in other fields. Should one of these fields be HRD?

The Transtheoretical Model of Individual Change

The TTM is a model of a stage-based theory of behavioral change. This model integrates the core constructs of the stages of change, the processes of change, self-efficacy, decisional balance (Barnett, 1997), and critical underlying assumptions about the "nature of behavioral change and about the interventions that can best facilitate such change" (Prochaska et al., 1997, p. 65). The stages represent *when* an individual is ready to change. The processes represent *how* an individual will change. Self-efficacy refers to the confidence people have that they can change and maintain behavior even with temptation. Decisional balance is defined as an individual's relative consideration of the pros and cons of changing (Prochaska et al., 1997). It "predicts that individuals systematically change their readiness…on the basis of what they perceive to be balances between the costs and benefits of maintaining the behavior and the costs and benefits of change" (Morera et al., 1998, p. 182). Finally, Prochaska et al. (1997) provided a set of critical assumptions that drive both TTM research and practice (see Table 1). Over time, studies expanded, validated, applied, and challenged the core constructs of the TTM. A detailed description of the stage and process constructs will be presented in the next section so that a plausible evaluation of the model can be made.

Table 1. *Critical Assumptions of the Transtheoretical Model of Change*

	Critical Assumptions
1.	Because no one theory can account for all the complexities of behavioral change, a more comprehensive model will emerge from an integration across major theories.
2.	"Behavioral change is a process that unfolds over time through a sequence of stages" (p. 65).
3.	Stages are both stable and open to change.
4.	Without planned interventions, individuals will remain stuck in the early stages because there is no inherent motivation to progress through the stages of intentional change.
5.	Certain types of change interventions (e.g., health promotion) can have much greater impact if it shifts from an action paradigm to a stage paradigm.
6.	"Specific processes and principles of change need to be applied at specific stages if progress through the stages is to occur" (p. 66), and intervention programs must be matched or paired to each individual's stage of change.
7.	"Chronic behavioral patterns are under some combination of biological, social, and self-control. Stage-matched interventions have been designed primarily to enhance self-control" (p. 66).

Note: Adapted from Prochaska et al. (1997).

Stages of Individual Change

Prochaska and DiClemente (1984) found that behavioral change is a process involving advancement through a series of six stages: precontemplation, contemplation, preparation, action, maintenance, and termination (see Table 2). Even though these stages are depicted as linear, Sullivan (1998) urged that the typical path of behavior change "usually involves slips backward and has been described as a spiral pathway" (p. 2).

Table 2. *Stages of Individual Change in Which Change Processes are Most Emphasized*

	Stages of Individual Change	*Processes of Individual Change*
1.	Precontempation	
		Consciousness Raising, Dramatic Relief, Environment Reevaluation
2.	Contemplation	Self-reevaluation
3.	Preparation	Self-liberation
4.	Action	Contingency Management, Helping Relationships, Counterconditioning, Stimulus Control
5.	Maintenance	
6.	Termination	

Note. Adapted from Prochaska, Redding, and Evers (1997). The table does not include the tenth process, social liberation.

Precontemplation. In the precontemplation stage, an individual resists change and has no intention of taking action within the foreseeable future. In this stage, the individual may be unaware, uninformed, underinformed, unconcerned, defensive, in denial, or demoralized about their ability to change (Block & Keller, 1998; Prochaska & DiClemente, 1984; Prochaska, Redding, & Evers, 1997).

Contemplation. In the contemplation stage, individuals acknowledge the need for change and intend to take action within the foreseeable future (e.g., 6 months). They are now aware of the pros and cons of changing. Individuals in this stage struggle to understand problems, causes, and cures. They seek more accurate information for making a change. They are seriously thinking about changing, but have not yet made a commitment (Prochaska et al., 1997).

Preparation. In the preparation stage, the individual intends to take action within a definite time frame (e.g., within the next 30 days), and has taken some behavioral steps in this direction. Individuals have a plan of action, are making preparations, and are intending to take action to change soon (Lawrence, 1999; Prochaska et al., 1997).

Action. Individuals in the action stage are modifying their behavior and the environment that affects their behavior. These changes tend to be more visible, and individuals get recognition for them. According to Prochaska and DiClemente (1984), action tends to be the briefest stage of change and yet the one in which most of the overt progress is made. Prochaska and colleagues (1997) suggested that this stage includes actions taken for less than six months.

Maintenance. Individuals in this stage have changed overt behavior for a substantial period of time (e.g., more than 6 months). They work to prevent relapse, but they do not apply change processes as frequently as do individuals in the action stage. Maintenance is a long, ongoing stage in which individuals work to continue the change gains attained during the action stage. This stage continues until it is fairly certain that the individual will continue in his/her current behavior (Prochaska & DiClemente, 1984; Prochaska et al., 1997).

Termination. The final TTM stage, termination, is only applicable to some behaviors, particularly addictions. This stage would not apply to many changes within the workplace. In this stage, individuals have no temptations, no slips, and 100% self-efficacy. In fact, no matter what happens, they will never return to their old behavior (Prochaska et al., 1997). Many change attempts never reach this stage (Block & Keller, 1998).

Processes of Change

The processes of change are the "covert and overt activities that people use to progress through the six stages" (Prochaska et al., 1997, p. 63). These processes are what people need to apply to move from stage to stage. They are important guides for intervention programs. It was reported that self-changers typically employ 8 to 10 of these processes (Turnbull, 2000). The ten most empirically supported processes include: consciousness raising, self-reevaluation, self-liberation, counter-conditioning, stimulus control, contingency or reinforcement management, helping relationships, dramatic relief, environmental reevaluation, and social liberation (Lawrence, 1999) (see Table 2). Many authors (e.g., Lawrence, 1999; Prochaska et al., 1997; Turnbull, 2000) explained the details of each of these processes.

Consciousness raising. This includes increasing awareness or gaining insight about a behavior (e.g., physical, cognitive), its processes and consequences, and how to change it. Increasing awareness can include feedback, education, confrontations, interpretations, and media campaigns.

Self-reevaluation. This process is based on assessing feelings and emotions about oneself and the issue to be changed. It combines cognitive and affective assessments of one's self-image. An individual perceives that his/her sense of self-values is in conflict with certain behaviors or experiences. Techniques such as visualization, value clarification, mental imagery, and corrective emotional experience can assist in this reevaluation.

Self-liberation. The belief that one can change and the commitment to act on that belief encompasses the process of self-liberation. It represents an increase in an individual's ability to choose. This includes becoming aware of new alternatives, the realization that one can create alternatives, or that one can be effective in making success happen. Techniques include New Year's resolutions, public testimonies, decision-making training, and commitment enhancing techniques.

Counter-conditioning. The substitution of more useful responses for certain problem behaviors is referred to as counter-conditioning. Individuals can change the way they experience or respond to particular stimuli. Techniques include relaxation, positive self-statements, assertion, and desensitization.

Stimulus control. This process involved removing cues for unwanted habits and/or prompts for desired behaviors. A restructuring of the environment reduces the probability of a particular conditional stimulus occurring or serves as cues or prompts to help an individual respond in more positive ways. Techniques include avoidance, environmental re-engineering, and self-help groups.

Contingency or reinforcement management. By changing contingencies or consequences that govern behavior, it is widely assumed that individuals change behavior. Although this process can include the use of punishment, it appears that self-changers rely on rewards much more than punishments. Procedures for increasing reinforcement include contingency contracts, overt and covert reinforcements, group recognition, and self rewards.

Helping relationships. By combining caring, trust, openness, acceptance, understanding, and support, behavior change can be enhanced. Appropriate techniques include rapport building, therapeutic alliances, counselor calls, mentoring, coaching, spousal and family support, and co-worker and managerial support systems.

Dramatic relief. This process includes experiencing and expressing feelings and emotions about problems and solutions. Strong emotional reactions to events occurring in the environment have moved people to change their lives. Helpful interventions include role-playing, grieving, personal testimonies, and media campaigns.

Environmental reevaluation. This change process is based on an affective and/or cognitive assessment of how one's problem affects the environment (e.g., the effect of one's angry reaction on an employee). It can also include the awareness that one (e.g., manager) may serve as a positive or negative role model for others. An individual's community values may be in conflict with his/her current behavior. Techniques include empathy training, documentaries, family, management, or co-worker interventions, and coaching/mentoring.

Social liberation. This process requires an increase in social opportunities (e.g., environment) which lead to more change alternatives. Techniques include advocacy, empowerment procedures, and appropriate policies. Examples include smoke-free zones in restaurants, salad bars in school lunchrooms, and work/life initiatives and policies (e.g., flexible work arrangements, FMLA enforcement) which can actually help all people change.

Evaluation

Dubin (1983) set forth guidelines for the construction of theoretical models. These can be effectively utilized to evaluate existing models such as the TTM. Dubin's eight-phase methodology specifies that theoretical models should have: 1) units whose interactions aggregate the topic of attention, 2) laws of interaction among the units, concepts, or constructs, 3) boundaries, 4) system states, 5) propositions or logical deductions, 6) empirical indicators or measurements, 7) statements about the model and the relationships among the units (i.e., hypotheses), and 8) actual empirical testing of the predicted values and relationships (Dubin, 1983; Torraco, 1997). These phases will be used to begin an evaluation of the TTM, since a full and complete evaluation is beyond the scope of this paper.

Units. The TTM has clearly defined "units whose interactions constitute the subject matter of attention" (Dubin, 1983, p. 23). The six stages of the TTM constitute units of the theory and include precontemplation, contemplation, preparation, action, maintenance, and termination. In fact, the literature described these stages in great detail. In addition, the ten processes of change are also distinct units of the model. Individuals typically go through all of these stages of individual change. However, many may start specific interventions at various stages. For instance, employees who are open and willing to accept new technological changes in the workplace may enter an intervention at the preparation stage. On the other hand, others may be more resistant to technological change and may enter at the precontemplation stage of individual change. With certain change interventions, an individual may not ever reach the termination stage, although with most HRD interventions it would be expected that individuals could complete all of the stages for effective and long-term change to take place.

Interaction. The ten processes of change are distinct, yet they interact and sometimes occur during the same timeframe. These processes directly interact with the stages of change (see Table 2). There is a positive relationship between successful application of the processes of change and progression through the stages of change. There is also a relationship between the lack of utilization of the processes of change used and the lack of stage progression. Once an individual has effectively fulfilled one stage, he/she will progress to the next. According to Mahalik (1990), "Prochaska and DiClemente do not focus on techniques. Instead they examine how processes of change interact with stages and levels of change" (p. 667). Individuals progress through the stages of change, starting with the precontemplation stage and progressing through the termination stage. The processes of change are what actually facilitate the progression of individual change from one stage of change to the next. For example, to progress from precontemplation to contemplation, three processes of change are often used or applied: consciousness raising, dramatic relief, and environmental reevaluation. To progress from the action to maintenance stage, contingency management, helping relationships, counter-conditioning, stimulus control have been found as effective processes in the change intervention. If processes are not effectively used, individuals may not progress to the next stage or they may even slip back to a previous stage. For example, an employee has participated in an assertiveness training or coaching and, during the past six months, has moved from the precontemplation to the action stage of practicing assertiveness techniques in the workplace. If the intervention does not include contingency management, helping relationships, counterconditioning, and/or stimulus control, the employee may not be able to progress to the maintenance stage of individual change. In this case, the employee may stay at the action stage for a time but then may slip back to the contemplation stage. He/she may still have a raised consciousness, but the support systems or rewards may have not been strong enough to maintain or complete the change. This does not mean that it was a waste of time and effort because the employee does not necessarily need to start at the beginning of the stages again. Understanding and assessing these stages and processes in individual employee can be a very valuable tool in the design of individual change interventions.

Boundaries. Boundaries have been set and reset for the highly researched and applied TTM. Porter (1999) explained that one boundary is that the individual possesses the locus of control and the ultimate responsibility for change. The model was initially developed for individuals who desired or were encouraged to quit smoking. Within the boundary of the individual's attempt to case smoking, empirical research was conducted and the TTM was found to be effective. Soon, the boundaries or limits of the TTM were expanded to include many applications and interventions. Research was conducted in these areas to determine if the extension of the boundaries was appropriate. Along with this research, new measurement tools were (and continue to be) designed and validated so that the new boundaries could (and can) be empirically tested. This article is the beginning of a new expansion of the TTM boundaries to include HRD research and practice. The complexity lies in the fact the HRD overflows with potential uses of this model of individual change. For example, a boundary extension of the TTM may be effective for interventions like stress management, organizational skills, and assertiveness training, but may not be as effective for individual change interventions related to use of technology, certain job designs adjustments, or the use of particular work and family programs. Even though fairly clear boundaries have been set for this model, each expansion dictates new empirical indicators, hypotheses, and research. The model also provides critical assumptions

(see Table 1) that are important in understanding the boundaries and systems states of the model and its utility to HRD. The assumptions are about the nature of change and the interventions that can best facilitate it. Assumptions are essential in deeply comprehending the TTM and its limits, or boundaries that "must be set forth within which the model is expected to hold" (Dubin, 1983, p. 22).

System states. In the previous stage and processes descriptions, many system states were "defined by the values taken by all the variables or units in the system" (Dubin, 1983, p. 24). Dubin (1983) defined a system state as being a "condition of the system being modeled in which the units of that system take on characteristic values that have a persistence through time, regardless of the length of the time interval" (p. 24). The system states of this model appear to do just that. According to Mahalik (1990), "in their conceptualization, a stage of change is both a period of time and a set of tasks that need to be done before moving to the next stage" (p. 666). Each individual is unique, and the model is designed to be flexible for individual change. The model has built-in descriptions of what it means to be at different stages of the process. Examples of system states may include: 1) the model presents consequences of persistence of a state (e.g., if one never starts to prepare for change, one will never progress to the action stage of the model); 2) if change processes are not used, progression through effective individual change will be thwarted; and, 3) if an individual continues to progress through the stages of change, he/she can expect to eventually make the desired change and be able to maintain the new behavior. Porter (1999) explained that overall, "the path and timing of every individual's journey thorough the cycle of change are unique, and the key to making progress is to fully experience and work through the particular concerns for each stage in turn" (p. 86).

Propositions. Because of the vast research that has been conducted with each stage and process of the TTM, many appropriate logical propositions have been made and tested. Some propositions from the TTM include: 1) individuals cannot properly prepare for change unless they have fully contemplated (e.g., they are aware of the pros and cons) the change; 2) individuals who have no intention of taking any change action cannot be forced into long-term individual change; 3) individuals cannot progress effectively through the stages of change unless they participate in some types of change processes; and 4) consciousness raising is an effective process that can assist individuals progress from the precontemplation stage to the contemplation stage of change.

Empirical indicators. There have been numerous empirical measures designed to make the propositions testable. Many of them (e.g., Batten, 1999) appear to be survey questionnaires measuring perceptions and self-reports or experiments where behavioral changes were observed and documented. For example, to measure the first proposition listed previously (i.e., individuals cannot properly prepare for change unless they have fully contemplated) requires measurement of an individual's contemplation. Precontemplation and contemplation were most accurately measured through perception questionnaires or interviews. A wide range of validated empirical indicators have been designed to measure TTM variables. The indicators appear to differ depending on the model's use. For example, measuring a person's readiness for cancer control interventions may be different than measuring an individual's readiness to begin a serious exercise regimen. Cohen et al. (1994) used the TTM as a framework to design a readiness to change questionnaire to measure the readiness of physicians in the U.S. to implement specific guidelines. This tool might be appropriately modified to measure readiness to implement various types of guidelines or process changes in the workplace.

Hypothesis. According to Dubin (1983), "the next operation is to substitute the appropriate empirical indicators in the prepositional statement to generate a testable hypothesis" (p. 23). TTM research is full of hypotheses that meet this evaluation criteria. For example, individuals in the preparation stage of change will perceive themselves as already completing the elements in the contemplation stage (e.g., intending to take action, aware of pros and cons). One empirically tested hypothesis was that individuals in the preparation stage were more likely to start and adhere to a new exercise regimen than those in the contemplation stage.

Research. As already discussed, vast research has been conducted on the model and its practical use. Hundreds of articles report the results of such investigations. Research has been designed to test the general model, to test the model for new uses, to expand the boundaries of the model, to validate new or existing instruments, and more. Porter (1999) reported that nearly $50 million had been spent, between the model's introduction in the early 80s and 1999, to research the efficacy of the TTM. The model "has been found to be scientifically reliable and valid, and the firm structure of its stage and associated processes has been demonstrated in a series of studies utilizing confirmatory factor analysis" (Porter, 1999, p. 86).

Summary of the Evaluation

Most researchers have found that the TTM appears to be a well-built theoretical model that has endured empirical research (e.g., Morera et al., 1998; Porter, 1999; Turnbull, 2000). Previous studies verify that it has units that interact, boundaries, appropriate propositions, empirical indicators, hypotheses, and ample research to confirm its credibility and worth as a theoretical model of individual change, according to Dubin's (1983) criteria. Past research reports of TTM utilization include little criticism and vast support for its various uses.

Implications for HRD

The success of organizational improvement efforts is dependent on many individuals making changes. Ruona and Swanson (1998) stated that "there is definite agreement that individuals are central in HRD… Individuals are the mediating force through which development is done and the impact of HRD is experienced" (p. 5). Knowing an individual's stage of readiness is important in order to change a given behavior and increase its success rate. Interventions should be tailored to the individual's stage of change and process of change being implemented (Mahalik, 1990). The TTM "embraces the concept of change as a process and emphasizes the need to target change strategies appropriately according to individual readiness" (Moulding et al., 1999, p. 179). Knowing how many and which employees are at the "various stages of readiness to change can help in projecting the magnitude of improvement that may be expected" (p. 26).

Since only a small percentage of employees in any organization is ready for change at a given time, HRD practitioners must be prepared to use a variety of processes of change (any activity that helps modify an employee's thinking, feeling, or behavior) (Sullivan, 1998, p. 3). The model offers measurable feedback on progress relative to the stages and processes of change. Perhaps it is important that change agents not only assess precisely where and how to target interventions, but also be able to monitor progress from one intervention contact to the next (Lawrence, 1999). The TTM is a dynamic theory of change, and research on the model continues to be vibrant. HRD seeks to identify and develop models that can assist in unleashing the expertise of employees by empowering them with tools to positively change and improve. The TTM fits nicely into the HRD goal of having individuals and managers take responsibility for their own change. The assumptions and dynamics of the TTM are consistent with those of HRD (see Table 3).

Table 3. *Dynamics of the TTM in HRD*

Questions	*Transtheoretical Model*
How does change happen?	Change happens through a gradual spiral through stages.
Is the change visible?	Some changes are visible, but some are internal and invisible.
What does change look like?	The stages are fixed, but the time in each and the direction of travel is individual.
Who's in charge of the change?	The employee who is attempting to change is in charge.
What is the role of the HRD consultant/practitioner?	A consultant/practitioner should be a collaborator.
What is motivation?	Motivation is individual, stage specific, and whatever helps an employee move to the next stage.
What does resistance to change indicate?	It indicates the lack of fit between the change action and the employee's current stage.
When is the change intervention successful?	Success is wherever the employee chooses to exit the cycle.

Note. Adapted from Porter (1999), p. 87.

The variety of past research and literature (e.g., Cohen et al., 1994; Moulding et al., 1999; Porter, 1999; Turnbull, 2000) leads to the conclusion that this model may be appropriate for various types of change in the workplace. This may include potential changes such as habits or skills related to communication (e.g., listening, assertiveness, feedback), time management, health, use of technology, new processes, guideline implementation, awareness, harassment issues, workaholism, absenteeism or tardiness, better management techniques, attitudes, temperament, negotiating, work and family balance, and coping. This would also include preparing employees for difficult training and development interventions in areas such as changing a corporate culture, restructuring well-established processes, adding new safety requirements and procedures, developing new skills employees may feel are unnecessary. Overall, this model may be helpful in interventions where employees have formed behavioral habits and opinions and may be (but not always) closed-minded, unmotivated, and resistant to change.

Conclusion

Researchers and practitioners around the world continue to extend the TTM stages of change and concepts to new problems, populations, and settings (Prochaska et al., 1997). The model developers continue to encourage its expansion and modification. Batten (1999) explained that

> The value of the stages of change model as a tool in experiential teaching and learning is beyond doubt. It gives credence and structure to the experience of trainers, trainees, practitioners and clients alike…They can relate their own experience of behavior change to the model, can stage themselves in relation to any behavior they might like to change, and can begin to identify the differences in languages a person might use to talk about their experience, depending on which stage of change they are in… and helps them to learn to treat all experience as an opportunity for each individual to glean information about what works for them, and what does not, in their progress towards creating and maintaining change. (p. 77)

Change is an essential piece of effective HRD interventions. For continued progress of research and practice in HRD, it is essential that we continue to explore the utility of models such as the TTM in our field. It is hoped that this article proves useful in the ongoing development of HRD individual change theories, tools, and interventions. A recommendation is that we begin work in expanding the boundaries of this theoretical model by considering the many propositions and begin to develop empirical indicators and hypotheses that apply to individual change interventions in HRD. Another recommendation is that qualitative and quantitative research methodologies be used to explore new relationships and test them to show how this model can be applied in HRD practice.

Sullivan (1998) stated that mastering behavior change is critical to our quality of life (e.g., work life and home life). The TTM can be one more tool for HRD to implement effective change for employees and organizations.

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