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Adaptivity through self-directed learning to meet the challenges of our ever-changing world

Abstract

Fostering adult learners' competence to adapt appropriately to our ever-changing world is a primary concern of adult education. The purpose of the present paper is novel and examines whether the consideration of *modes of learning* (instruction, performance, and inquiry) could assist in the design of adult education that facilitates self-directed learning and enables learners to think and perform adaptively. The concept of modes of learning originated from the typology of Houle (1980). However, to date no study has reached beyond this typology, especially concerning the potential of utilizing modes of learning in the design of adult education. Specifically, an apparent oversight in adult learning theory is the foremost importance of the consideration of whether inquiry is included in the learning process: its inclusion potentially differentiates the purpose of instruction, the nature of performance, and the underlying epistemological positioning. To redress this concern, two models of modes of learning are proposed and contrasted. The *reinforcing* model of modes of learning (instruction, performance, *without* inquiry) promotes teacher-directed learning. A key consequence of employing this model in adult education is that learners may become accustomed to habitually reinforcing patterns of perceiving, thinking, judging, feeling, and acting—performance that may be rather inflexible and represented by a distinct lack of a perceived need to adapt to social contextual changes: a lack of motivation for self-directed learning. Rather, the *adapting* model of modes of learning (instruction, performance, *with* inquiry) may facilitate learners to be adaptive in their performance—by encouraging an enhanced learner sensitivity toward changing social contextual conditions: potentially enhancing learners' motivation for self-directed learning.

Key words

self-directed learning, adult learning, modes of learning, model, education, instruction, inquiry, motivation, constructivism, adaptivity

Fostering adult learners' competence to adapt appropriately to our ever-changing world is a foremost concern for a multitude of stakeholders of adult education. This includes adult educators, curriculum developers, managers, and government policy-makers, but also personnel concerned with human resource development. The purpose of the present paper is novel and examines whether the consideration of *modes of learning* (instruction, performance, and inquiry) could assist in the design of adult education that facilitates self-directed learning and enables learners to think and perform adaptively.

The concept of modes of learning originated from the typology of Houle (1980). This was the first theoretical framework that sought to classify learning activities of adult professionals by their structural forms (Cervero & Dimmock, 1987).

Houle (1980) identified three "major and overlapping modes of learning" (p. 31): instruction, "the process of disseminating established skills, knowledge, or sensitiveness" (p. 32); inquiry, "the process of creating some new synthesis, idea, technique, policy, or strategy of action" (p. 31); and, performance (later renamed reinforcement (Houle, 1984)), "the process of internalizing an idea or using a practice habitually, so that it becomes a fundamental part of the way in which a learner thinks about and undertakes his or her work" (p. 32).

However, to the knowledge of the present author, no study has reached beyond Houle's typology. Especially concerning the potential of utilizing modes of learning in the design of adult education to assist in the facilitation of self-directed learning.

Self-directed learning is a means to change—representing, "major, highly deliberate effort to gain certain knowledge and skill (or to change in some other way)" (Tough, 1971, p. 1). Self-directed learning seems imperative in a world that is becoming ever more complex and changeable, where much benefit is gained from adapting behavior accordingly (Brooks & Edwards, 2013; Dzubinski, Hentz, Davis, & Nicolaidis, 2012).

For example, an owner of a clothing shop could be proactive in keeping up-to-date with the current fashion trends and then change what clothes they sell accordingly, with great business success. A competing shop owner may not attend to the changing fashion trends and not change the clothes they sell and become bankrupt in time.

A paint manufacturer that has been producing the same powder coating paint for industry for many years could face declining demand. Rather, a competing business could notice that demand for such paint was in decline. They could proactively learn about what type of paint is in demand and change their manufacturing and product offering accordingly, growing their business.

An unemployed person could explain that they have no work because, for example, they are a coal miner and the coalmine closed fifteen years ago. However, fifteen years ago, a co-worker who was also made redundant noticed that due to environmental policy change there was a growing demand for renewable energy and sought training and employment in the field of solar energy.

This paper addresses, in part, the concern that "traditional" forms of adult education, that entail teacher-directed processes of knowledge and skill inculcation, are often not

effective, nor suitable for preparing adult learners for life (cf. Alston et al., 2016; Brooks & Edwards, 2013).

An overview of the concept of self-directed learning as a critical competence that enables adaptivity is discussed, followed by a summary of factors that could influence motivation for self-directed learning. Afterwards, a theoretical argument is presented that modes of learning may be an important consideration in the design of adult education, especially regarding learner initiation and maintenance of motivation for self-directed learning.

Self-directed learning as a critical competence

Self-directed learning is a *critical* competence that empowers adults to adapt accordingly to fluid and complex social contextual changes (Abele & Wiese, 2008; Helterbran, 2017; Kranzow & Hyland, 2016; Marsick & Watkins, 1992, 1996). Education that targets the fostering of self-directed learning competence offers “great promise” in preparing adults for their working life (Boyer, Edmondson, Artis, & Fleming, 2014, p. 20).

Advantages of fostering self-directed learning competence include: avoidance of knowledge and skill obsolescence (Cranton, 1992; Gould, 1978; Morrison & Premkumar, 2014; Oddi, 1987); enabling individuals to “upskill” in the event of changes in economic conditions, providing them with a certain protection against long-term unemployment (Barnes, Brown, & Warhurst, 2016); empowering emancipatory action (Bagnall & Hodge, 2018; Freire, 1970); and, facilitating learners’ progression toward self-actualization (Groen & Kawalilak, 2014; Maslow, 1943; Rogers, 1969).

Self-directed learning does not occur in a social or contextual vacuum. Recent scholarly discussion has highlighted that there is a need for learners to balance personal goals with societal needs (Author, 2018a; Guglielmino, 2008; Tan, 2017). This perspective builds upon Garrison’s (1997) hypothesis that in formal education the educator inevitably plays a very important collaborative role in assisting students to appreciate the need to consider “what counts as worthwhile knowledge” (p. 23).

Moreover, Tan (2017) proposed that self-directed learning is ultimately underpinned by a “shared moral vision” (p. 250) of the “individual” and the “collective” (p. 251). She criticized Knowles’ (1975) definition of self-directed learning due to him not considering the “collective”, claiming that he defined self-directed learning as “a process in which individuals take the initiative *without the help of others*”... (Tan, 2017, p. 251 (citing Knowles, 1975, p. 18, as cited in Mezirow, 1985, p. 17, with italics added)).

Nonetheless, Tan (2017) made a fundamental citation error in this regard: Knowles’ definition *does* actually acknowledge the “collective” aspect of self-directed learning:

In its broadest meaning, “self-directed learning” describes a process in which individuals take the initiative, *with or* without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (Knowles, 1975, p. 18, with italics added)

In this regard, Author (2018a) systemically analyzed teacher-learner transactions that foster self-directed learning in an anonymous context. This report highlighted the importance of the educator allowing learner control, but also in assisting learners to appreciate the societal and environmental demands. A distinct limitation of this study, and a commonality in scholarly work on self-directed learning, was a lack of consideration of a broad range of factors that may influence learners’ motivation for self-directed learning.

Motivation for self-directed learning

In reference to self-determination theory of motivation (Ryan & Deci, 2017), Rigby and Ryan (2018) discuss multiple kinds of motivations, which fall on a “spectrum of *motivational quality*” (p. 136). Rigby and Ryan explain that “volitional, high-quality motivation” is “energized directly by the employees’ needs, values, and interest” (p. 136), which is “evident when one pursues goals and values that are personally meaningful” (p. 137).

In line with self-determination theory, the majority of adult learning is characterized by a process that is life-centered and self-directed, motivated by highly practical reasons, personal interest, curiosity, and/or enjoyment (cf. Tough, 1971). Intrinsic reasons to pursue learning, such as a desire for job-satisfaction or quality of life are viewed as the most potent motivators for self-directed learning (Knowles, Holton, & Swanson, 2015).

In addition, it may be important to consider factors inherent in a learner’s context that may influence their motivation for self-directed learning (Author, 2018a). For example, McCartney and colleagues (2016) identified that peer/social group is an important factor. Matsuo (2015) highlighted the significance of learners having a workplace developmental network. Moreover, it may be important to consider that the learner(s) themselves also represent an important contextual factor (Tessmer & Richey, 1997).

In this regard, characteristics of learners are likely to have a powerful influence upon their tendency and propensity toward self-directed learning (Alharbi, 2018; Barry & Egan, 2018; Merriam, 2018). For instance, empirical studies have reported strong correlations between learner self-directedness and conscientiousness, openness (big five traits), optimism, and work drive (narrow traits) (Kirwan, Lounsbury, & Gibson, 2010, 2014; Lounsbury, Levy, Park, Gibson, & Smith, 2009; Major, Turner, & Fletcher, 2006).

Furthermore, a learner’s self-regulatory processes are likely to have a significant influence upon their motivation for self-directed learning. Educators should consider that

learners are active agents and self-regulate, to various degrees, cognitive, motivational, affective, and social contextual aspects of their learning process (Jones, 2017; Pintrich, 2004; Zimmerman, 1990).

However, there is relatively less understanding of how the process of self-directed learning, in terms of management of learning tasks, influences a learner's motivation for self-directed learning. Historical studies reported that a positive or negative experience of self-directed learning might affect further motivation to pursue self-directed learning (e.g., Kasworm, 1983; Knowles, 1975).

Staged models of self-directed learning address this concern. Staged models advocate a gradual move from teacher-directed learning to self-directed learning (cf. Arnold, 2015; Author, 2018b; Grow, 1991).

Moreover, Langer's series of empirical studies (refer to Langer, 2017) emphasized the central importance of considering the *nature* of the learning process—how learners learn. Langer referred to a common educational problem of “teaching certainty” (p. xxiii), where “teaching puts a premium on absolute answers” (p. xxiii). Her experimental studies demonstrate that learners may develop a tendency to apply the “learned” information to new life-situations—often inappropriately—mindlessly. She concludes that “perspective-free facts create an illusion of knowing” (p. xxiii). Rather, maintaining meticulous attention toward detail of the social and environmental context seems imperative in order for the self-directed learner to first identify a “need” to adapt to a social contextual change.

The following section examines whether consideration of modes of learning may assist in the understanding of how to design adult education that fosters learners' sensitivity to changes in social contextual conditions. A perceived need to adapt to change is theoretically a pivotal mediator for the initiation and maintenance of motivation for self-directed learning (Rigby & Ryan, 2018; Ryan & Deci, 2017).

Models of modes of learning

Two models of modes of learning are proposed and contrasted in the forthcoming discussion: the reinforcing model of modes of learning (instruction, performance, *without* inquiry) and, the adapting model of modes of learning (instruction, performance, *with* inquiry). Whether or not inquiry is included in the learning process is an important consideration: it potentially differentiates the purpose of instruction, the nature of performance, and the underlying epistemological positioning.

The reinforcing model of modes of learning

When educators facilitate instruction without inquiry, learners' performance may represent a process of reinforcing (Figure 1). In this instance, performance concurs with Houle's (1980) definition. Education may reflect a number of didactical concepts, such as the traditional education model (Dewey, 1938/1963), the pedagogy model (Knowles, 1970, 1980), or the banking concept (Freire, 1970)—a process representing teacher-directed learning: where the educator directs the learning means and objectives.



Figure 1. The reinforcing model of modes of learning

In the learning process, learning objectives are definable at the planning stage, are intended to be uniform, and the successful accomplishment of which defines the learning "success". Positive or negative feedback can be used to shape learning outcomes toward the socially approved behavior—the pre-determined learning objectives.

An educational curriculum may be systematically arranged in a stepwise fashion so that learners progressively target more difficult learning objectives. Thus, learning in this regard is a process of moving back and forth between the modes of instruction and performance.

When educators employ the reinforcing model of modes of learning behaviorist assumptions are upheld. The ultimate objective of which is to control learners' behavior (Skinner, 1971/1987; Thorndike, 1898; Watson, 1994): to shape their growth in a particular direction (Bruner, 1966). Thus, the process benefits from learners acting meekly and uncritically rather than actively or judgementally (Dewey, 1916/2013).

The adult educator may deem that in certain but perhaps limited educational circumstances employing the reinforcing model of modes of learning seems logical. In this regard, Houle (1980) discussed that established skills, knowledge, or sensitiveness may be instructed to professional persons then practiced and monitored to ensure effective implementation.

For example, a fast food franchise that has restaurants in different cities may require that their products, such as burgers or coffee, are standardised across the business. In such a circumstance, the reinforcing model of modes of learning may be deemed the most fitting model by the company's educator.

Moreover, when the educator considers that facilitating learner inquiry could be potentially dangerous, such as in the teaching of basic first aid, beginner gymnastics, or preliminary driving lessons, the reinforcing model of modes of learning may be judged most appropriate.

In these examples, formal instruction may be followed by repetitive practice, supported by feedback regarding the “correctness” of the learner’s performance. The adult educator could, feasibly, in all of the above examples, move away from the reinforcing model of modes of learning, perhaps in a more advanced stage of the education course, when any potential inherent danger has passed.

Yet, operating the reinforcing model of modes of learning may lead to learners’ understanding being assimilated uncritically. Subsequently, learners may become accustomed to reinforcing habitual patterns of perceiving, thinking, judging, feeling, and acting, rather than adapting to social contextual changes through practicing self-directed learning (Arnold, 2017; Mezirow, 1978, 1991, 2009).

Such educational processes support Langer’s (2017) concept of mindless learning, in which learners become ignorant, or desensitized, to changes in social contextual conditions. A key consequence is that learners may apply the knowledge or skills learned in contexts with differential conditions without noticing the need to adapt accordingly (Langer, 2017). Specifically, under such educational processes, the educator does not encourage learners to attend toward the possibility that the information learned may *not* retain its correctness across context or time.

In this regard, in a series of lectures Dewey (1915/2010) identified that often in such education “facts” are commonly taught with their contextual information removed. When learners act *passively* in the inculcation process of knowledge or skill, meaning schemes may develop that are broad and rigid—decontextualized—which, in other words, “may distort our ways of knowing” (Mezirow, 1991, p. 5).

A key consequence of which may be represented by learner cognitive defensiveness, which includes the fear of failure and avoidance of new ideas and activities, displayed in a distinct learner “rigidity” accompanied by a lack of a tendency and propensity toward self-directed learning (Oddi, 1986, p. 99).

When educators facilitate the reinforcing model of modes of learning, learners may begin to perceive that what they know, in terms of knowledge or skills, is “true”, generally; irrespective of social or contextual conditions. This *reduced sensitivity* toward changing conditions may result in a distinct lack of a perceived need to adapt to social contextual changes and, subsequently, a lack of motivation for self-directed learning. This is especially important because establishing cognitive interest is perhaps the strongest motivator for self-directed learning (Kim & Merriam, 2004; Rigby & Ryan, 2018; Ryan & Deci, 2017).

The adapting model of modes of learning

In accordance with the adapting model of modes of learning (Figure 2), the addition of the inquiry mode in the learning process differentiates the nature of the learners' performance, the underlying epistemological positioning of the learning process, and the purpose of the instruction.

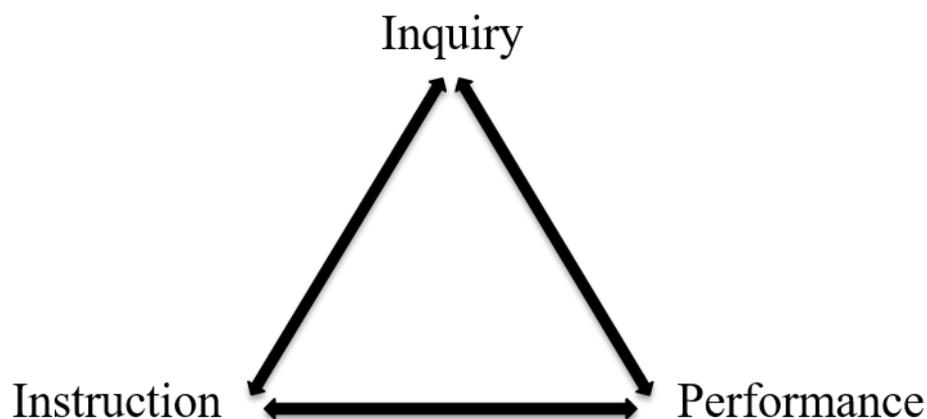


Figure 2. The adapting model of modes of learning

Importantly, Houle's (1980) definition of performance is no longer appropriate. Rather, the learners' performance becomes an *active* process of *adapting* in which understanding is *critically* construed.

An adult educator should appreciate that, in regards to an adult's working life, adaptive performance potentially positively modulates long-term career success (Seibert, Kraimer, & Crant, 2001) and has been positioned as the *conditio sine qua non* of professional expertise (Ward, Gore, Hutton, Conway, & Hoffman, 2018). Adaptivity is defined as "the ability to employ multiple ways to succeed and the capacity to move seamlessly among them" (Hoffman et al., 2014, pp. 51–52).

Moreover, the inclusion of inquiry in the learning process alters the educational epistemological positioning. Rather, the process of inquiry champions constructivism, in which learning represents an individual, interpretive, and active process (cf. Merriam, Caffarella, & Baumgartner, 2007; Rogers-Shaw, Carr-Chellman, & Choi, 2018).

Jonassen (1999) identified that the fundamental difference of a constructivist learning environment is that the process, referred to as an "inquiry project" in the present paper, is driven by "the question or issue, the case, the problem, or the project that learners attempt

to solve or resolve” (p. 218). He highlighted that “nearly every conception of constructivist learning recommends engaging learners in solving authentic problems” (p. 221).

In this regard, Gibbons (2002) discussed that the process of creating solutions to inquiry projects necessitates a learning process/learner competence to undertake “scientific-like investigations” (p. 8). In the learning process, learning outcomes may not be uniform and cannot be definitely predicted in advance. Importantly, *creative* outcomes are possible in the process.

Furthermore, the purpose of “instruction” changes. The objective of instruction includes a process of identifying human or material resources that could assist the creation of a solution to the inquiry project (cf. Dzubinski, Hentz, Davis, & Nicolaidis, 2012; Knowles, 1975). In most circumstances, learners would seemingly benefit from considering the *fittingness* of established knowledge and skills to *specific* inquiry projects.

The educator themselves, other experienced persons, or the learner’s own experience, may represent a valuable human resource (Lindeman, 1926; Merriam, 2008). Moreover, because inquiry projects are inevitably real-world based, gaining pragmatic feedback either through active experimentation or reflection upon concrete experience seems imperative (Kolb, 2015; Kolb & Kolb, 2013).

Additionally, the adapting model of modes of learning complements and extends the scholarly discussion concerning self-directed learning being a process of collaboration (Author, 2018a; Guglielmino, 2008; Knowles, 1975; Tan, 2017). Indeed, the process of inquiry may be supported through working with others, especially through Socratic dialogue (Kasl & Yorks, 2002; Storey & Wang, 2017).

The adapting model of modes of learning may support the fostering of learner appreciation that adult learning does not occur in a social or contextual vacuum. In this regard, Langer (2017) explained that it is important that learners learn to become confident with uncertainty—appreciating that knowledge or skill may not be fitting across context and may become outdated across time.

To realize this, an attitude of cognitive openness—a key characteristic of self-directed learners—seems essential. Cognitive openness has been defined as an “openness to new ideas and activities, ability to change, and tolerance to ambiguity” (Oddi, 1986, p. 99). In essence, a learner perception may be fostered that “no knowledge is secure, that only the process of *seeking* knowledge gives a basis for security” (Rogers, 1969, p. 21).

In terms of cognitivist theory, underlined by Gestalt principles, learning is a process of finding out which parts of nature belong as parts of their functional wholes (Koffka, 1935). In this respect, Bruner (1966) explained that curiosity is “a response to uncertainty and ambiguity” (p. 43) and “Curiosity is almost a prototype of the intrinsic motivation. Our attention is attracted to something that is unclear, unfinished, or uncertain” (p. 114). Thus, learner appreciation that no knowledge is truly secure in the course of time or across context seems imperative for the maintenance of curiosity and motivation for self-directed learning.

Finally, the adapting model of modes of learning may represent a model of self-directed learning in its own right. In this regard, the model could be used to facilitate self-directed learning in formal educational settings; when learners are enabled to assume control over both learning objectives and means—a central tenet differentiating the self-directed learning process (Mocker & Spear, 1982; Sawatsky, Ratelle, Bonnes, Egginton, & Beckman, 2017).

For an adult educator, the idea of instruction being part of self-directed learning may seem somewhat paradoxical. However, if inquiry is the process of creating a fitting solution to a question, issue, case, or problem, then learner exposure to a wealth of information concerning established knowledge or skills seems imperative.

Nevertheless, the self-directed learning process is differentiated in that learners retain control by directing, *choosing*, which knowledge or skills are most fitting for their inquiry project. To retain control over learning means a learner could proactively seek human or material resources. This may be via a multitude of media, such as a book, video, blog, website, lecture, and/or discussion with an expert in the field, such as with another learner or the educator.

Following receipt of the information, the process demands that learners think critically and judgmentally concerning its fittingness for their inquiry project. Thus, supporting an individual, active, and differentiated learning process. Importantly, the learner may deem, or choose, that *no* established knowledge or skill is fully fitting to his or her inquiry project. In such a case, the learner could attempt to be creative to design novel knowledge or skill that may be more appropriate.

Moreover, it is also possible that in formal education settings learners assume control over their learning objectives. This is exemplified in some vocational education institutions in the Netherlands (Kicken, Brand-Gruwel, van Merriënboer, & Slot, 2009). In such instances, learners are required to self-determine their own learning objectives in accordance with their individual professional needs, upholding the humanistic assumptions of self-directed learning (cf. Merriam, 2018).

If learners do not have the necessary skills for self-directed learning, which they commonly do not (Kicken, Brand-Gruwel, van Merriënboer, & Slot, 2009; Knowles, 1975), then the educator could, as per staged models of self-directed learning (e.g., Grow, 1991), initially assume a share of control of directing the learning process. Then, as learners gradually gain the necessary skills for self-directed learning, the educator may gradually remove their share of control as learners become competent in the process of self-directed learning.

Practical implementation and further research directions

To implement the adapting model of modes of learning in practice may require an alternative didactical framework. In this regard, building on the work of Hoffman and colleagues (2014), Ward, Gore, Hutton, Conway, and Hoffman (2018) propose a set of didactical principles to

support the fostering of adaptive performance, which includes: relevant inquiry projects that become increasingly challenging; feedback that stimulates critical thinking and reflection; challenging deadlines; opportunity to make cross-comparison between cases/projects, especially concerning the fittingness of concepts and their contextual differences; and, opportunity for instruction that provides learners with a rich conceptual/theoretical repertoire. Fostering learner skill to self-employ such a didactical framework is seemingly *critical* for fostering self-directed learning competence.

These principles, developed based on the review of scholarly research, represent a starting point for educators (Hoffman et al., 2014; Ward, Gore, Hutton, Conway, & Hoffman, 2018). Nevertheless, further empirical research is required to test the effectiveness of such principles in practice. Jossberger, Brand-Gruwel, van de Wiel, and Boshuizen (2017) call for further research and didactical understanding in this regard.

The adapting model of modes of learning could provide a useful framework for further empirical research, especially concerning the understanding of how to facilitate self-directed learning in formal educational settings. Case studies and longitudinal studies may be particularly useful for examining the nature of teacher-learner transactions in differential contexts. Moreover, as per the conclusions of Author (2018a), it is possible that there are discrete patterns in the balance of control of learning between teacher and learner in specific vocations.

Finally, it is important to point out that a third model of modes of learning was not considered in the present paper—the interaction of inquiry and performance, without instruction—which rather represents a process of discovery or play. In this regard, Kirschner, Sweller, and Clark (2006) argued that inquiry-based teaching that involves minimal guidance (no instruction) “does not work” (p. 75). Bruner (1973) described the act of discovery as rather “the most inefficient technique possible for regaining what has been gathered over a long period of time” (p. 69). Nonetheless, further research should not discount the possible value and importance of a discovery/play model of modes of learning, especially in terms of childhood cognitive development (cf. Davids, Güllich, Shuttleworth, & Araújo, 2017).

Conclusion

In the present paper, two models of modes of learning (Figure 1, Figure 2) are proposed and contrasted, which could be useful for educators to guide the design of adult education. When educators employ the *reinforcing* model of modes of learning a teacher-directed learning process is promoted. A key consequence is that learners may become accustomed to reinforcing habitual patterns of perceiving, thinking, judging, feeling, and acting—performance that may be rather inflexible and represented by a distinct lack of a perceived need to adapt to social contextual changes: a lack of motivation for self-directed learning.

Rather, the *adapting* model of modes of learning may assist educators to design education that encourages learners to become adaptive in their performance. Positioning with

constructivist epistemology, an inquiry project drives the learning process. Critical thinking is fundamental in facilitating successful learning outcomes. Learners are encouraged to appreciate that knowledge is not secure across context or time, encouraging an enhanced learner sensitivity toward changing social contextual conditions—potentially a pivotal mediator for the initiation and maintenance of motivation for self-directed learning.

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