

Abstract:

A qualitative study was undertaken that explored the conditions for transformative learning (Mezirow, 2000) in a specific form of work-integrated education (WIE), co-operative education, towards the development of a theoretical model. The research question considered was ‘what pedagogical and workplace practices available during WIE contribute to transformative learning?’ WIE students, supervisors and their co-op coordinator were the participants in this study. The findings from the study revealed several results that add to our theoretical models for WIE. First, WIE, including co-operative education, relies heavily on the constructivist perspective of Kolb’s Experiential Learning Theory (Kolb, 1984) yet the participants cited transformative learning from critical-cultural, psychoanalytical, situative and enactivist perspectives (Fenwick, 2000) with each perspective providing a different lens through which critical reflection, the antecedent to transformative learning, could be supported (Mezirow, 1998). Second, critical reflection, in addition to being supported from a variety of perspectives, was found to occur as a result of the resolution of contradictions found in the dialectic and mediated processes explicated by Activity Theory’s Cycle of Expansive Transition (Engeström, 1987). Third, the enablers (mediators) most involved in contributing to this process were: opportunities for work and learning, a supportive environment, student capabilities, co-workers, supervisors, and assessment and reflection practices. Fourth, within the context of WIE, Activity Theory introduces the dimensions of time, context and transformative processes (Keengwe & Jung-Jin, 2013) to our understanding of how transformational learning occurs and results in the transformative outcomes of self-formation (Dirkx, 2012), and social transformation (Merriam,

Caffarella, & Baumgartner, 2007). Fifth, the integration of these transformative outcomes into the WIE or workplace was dependent upon the time and value given to transformative processes, institutional requirements and a positive emotional environment that supported the resultant changes to the students' world view and ability to act (Avis, 2009; Hanson, 2013; Holman, Pavlica, & Thorpe, 1997; Taylor, 2008). The implications of these findings are that WIE theoretical models include considerations of: perspective, socio-cultural context, dialectic and mediated processes, time and creating a positive emotional space to support the critical reflection necessary for transformative learning outcomes. Furthermore, adopting a view of WIE as an interaction between two systems, with the resultant "knotworking", "boundary spanning" and "co-configuration" (Engeström, 2009), opens up possibilities for innovation and renewal in our WIE programs and workplaces.

Introduction:

Across the globe, hundreds of thousands of students are engaged in work-integrated education (WIE), a form of experiential education, which intentionally connects the education of those students to the world of work through a partnership between academic institutions, workplaces and students. Arising from the work of Dewey (1938) and typically grounded on Kolb's Experiential Learning Theory (1984), it is generally accepted that students learn through experiences within workplaces that pass through four stages: concrete experience, reflection, abstract conceptualization and active experimentation (Dewey, 1938; Kolb, 1984).

Previous practical and theoretical examinations of WIE are lacking in several areas. First, the three partners (i.e. institutions, workplaces and students) are viewed as independent,

rather than interrelated, agents, where the students learning is separated from the social process where that learning occurs (Eames & Cates, 2011, p. 49). Second, Kolb's theory, upon which WIE has developed, tends to view each of the four stages in the experiential learning cycle as independent, as opposed to dialogic, mediated and embedded in a socio-cultural context (Blackler, 2009; Holman et al., 1997). Third, transformational learning theory (Mezirow, 1991) is relatively underdeveloped (Van Gyn & Grove-White, 2011) and not considered in the context of WIE. Doing so would add to needed theory building for WIE (Bartkus & Higgs, 2011). Without a deeper understanding of the conditions and factors that lead to transformative learning in WIE, we are unable to guide, modify or evaluate, in any meaningful manner, the educational experiences we offer to students. Furthermore, if the outcomes of transformative learning are not integrated with the WIE system, we limit the opportunity for our institutions, workplaces and students to continue to learn after the WIE experience is concluded, and thus be responsive to the potential for change – both at the individual and social level.

Activity theory (Engeström, 1987), may provide a fresh look at WIE and address these issues by considering WIE as an activity system. Similar to Kolb's Experiential Learning Theory, Activity Theory is based in constructivism, but adds the dimensions of time, context and transformational processes (Keengwe & Jung-Jin, 2013) and enables understanding of WIE as an interrelated, interactive activity system. Activity theory considers activity systems as being: artefact mediated activities that are object oriented, comprised of a multiplicity of perspectives, have historicity, see contradiction as a source of change and development and have expansive transformation based on the resolution of these contradictions as the outcome (Avis, 2009). The understanding of how people

transform objects into outcomes is the goal of Activity Theory (Keengwe & Jung-Jin, 2013) and as such, makes for a useful theoretical perspective to develop our understanding of transformative learning (Mezirow, 1991) as an outcome of WIE. Furthermore, Activity theory and transformational learning theory share common goals of fostering both individual and social transformation (Mezirow, 1991, 2000, p. 4; Taylor, 2008).

Transformative learning requires the intentional use of critical thinking skills in the process of reflection and results in deep learning which is in turn a catalyst for future considered and informed action (Mezirow, 2000). Mezirow (1998) states that critical self-reflection can be enacted through a variety of perspectives (narrative, systemic and organizational) that allow for transformation at the personal, system and organizational level (Mezirow, 1998). Examining critical reflection through an Activity Theory lens may allow us to consider the individual's critical reflection within the context of a system, made up of mediating influences, multiple perspectives, historicity, relationships and interactions with others (Taylor, 2008). This more holistic view of reflection within context could, at the very least, improve our understanding of how to facilitate critical reflection (Hanson, 2013) and provide a new perspective on transformational learning within WIE.

The intention of this research was to explore the multidimensional nature of the conditions of WIE programs and the complexity of the educational practice of the workplace in supporting effective work-integrated education. In particular, the research intended to ascertain the conditions of the academic-work educational setting and its processes that enable transformative learning. This question was guided by the following

three key premises: that both educational institutions and workplaces are complex, dynamic activity systems embedded in a socio-cultural context (Engeström, 1987); that academic institutions are intentional in facilitating the students' shift to workplaces through their work-integrated programs (Branton et al., 1990); and that workplaces can be learning environments and as such there are conditions and processes that intentionally facilitate workplace learning (Eraut, 2002; Guile & Young, 2003). Based on these assumptions, the researcher considered evidence of transformational learning that had occurred during work-integrated education experiences and explored the enabling conditions from the perspective of the learner, the educational program and the workplace that enabled that transformative activity to both occur and be integrated back into the system.

Research Methodology:

A qualitative study was conducted where four case studies were developed based on evidence from interviewing students, their supervisors and coordinator at the beginning and end of one work term during the summer of 2013 (Yin, 2003). The Kelly Repertory Grid (Adams-Webber, 1979; Beail, 1985; Hunter, 1997; Kelly, 1955; Reger, 1990) was used as a way to elucidate and rate participant constructs (enablers) of transformative learning during WIE. The transformative learning experiences were categorized according to five perspectives (Fenwick, 2000). Narrative analysis was conducted on the interview transcripts. Aggregated data from the coordinator, student and supervisor interviews were analyzed. Activity theory, which theorizes that expansive learning is a result of a dialectic, mediated process embedded in a socio-cultural context (Engeström,

1987), provided the theoretical framework to interpret these constructs and their relationship to the conditions for transformative learning.

Results and Discussion

The mediators, or enablers, of transformative learning identified in this study were unique to each case, however common to all cases were the following categories: *opportunities to learn, opportunities to apply learning, assessment and reflection, student capabilities, supervisor support, team support and a supportive environment*. Which opportunities, what capabilities and types of support varied based on the student, the supervisor, the situation and whether the transformative learning was more constructivist, critical-cultural, psychoanalytical, situative or enactivist in nature (Fenwick, 2000).

The dialectical processes involved the interaction of these enablers as the students navigated their workplaces. Students applied their learning and the tools provided to them, questioned, engaged with their friends, family, supervisors, co-workers and clients, experimented, implemented ideas, received feedback and assessments, listened, researched and reflected. These dialectical, mediated processes were how the students engaged in reflection-in-action, reflection-on-action and reflection-for-action resulting in the narrative, systemic and organizational critical self-reflection that led to expansive, transformative learning (Engeström, 1987; Mezirow, 1998; Schön, 1987). The extent to which they were able to engage in these processes was influenced by their own confidence, the opportunities afforded to them, the support provided by the environment and time.

The Activity Systems had connectivity, in addition to the presence of the student whose physical presence spanned both. In each case the tools of applying relevant learning and

assessment devices acted as boundary spanners (Engeström, 2009). In some of the cases knotworking between the student and supervisor as they co-created programs, policies and procedures was evident (Engeström, 2009). In other cases co-configuration between the student, supervisor, team and client was identified (Avis, 2009; Engeström, 2009). This connectivity bound the two systems more firmly together and allowed for the integration of the transformative learning experienced by the students. This was evident in the case of the workplace system during this current work term where active co-creation was taking place.

A supportive environment included the enablers found within each system and also encompassed family and friends, and expanded Zone of Proximal Development (Vygotsky, 1986). This support was more than the provision of encouragement; it included respect, validation and role modelling. This environment provided the positive emotional conditions that nurtured engagement in healthy dialectical processes that could result in transformative learning and subsequent increased agency and more profound engagement on the part of the students (Roth, 2007).

The time dimension includes the historicity (Engeström, 1987) embedded within the context of each case, as well as the experience level of each student, the amount of time spent in this actual workplace and the time for reflection and integration after the fact. This study showed changes in the types of transformative learning and the strength of enablers from time 1 to time 2 that demonstrated the dynamic, evolving nature of Activity Systems and their outcomes (Roth, 2010).

This dynamic and evolving nature describes the elasticity inherent in this model. As the Coordinator pointed out, sometimes not all components of the model are robust, in which

case other dimensions compensate. A student might need to be more capable of engaging in dialectical processes, she might need to develop her own resources, identify her own community or create that supportive environment from family rather than rely on co-workers. Similarly, a supervisor might need to become more engaged in activating a weaker student's learning through feedback, framing and debriefings. More tools might be required, roles and rules might need to be adjusted and co-workers might be increasingly conscripted to assist. Awareness of the range of mediators, the possibilities of dialectical processes and agency influence how capably subjects in the model could adapt to less than ideal circumstances.

In summary, his study demonstrated that a theoretical model for transformative learning in WIE is comprised of the following elastic dimensions: first, dialectical, mediated processes that occurred within the WIE and the Workplace Activity Systems activated transformative learning; second, dynamic connectivity between these two systems of boundary-spanning, knotworking, and co-configuration supported integration, or co-creation; third, a supportive environment that included both Systems, friends and family created the positive emotional state that nurtured transformation; and fourth, that transformative learning takes place over time: past, present and future.

Implications

A model has been presented that provides a new way of considering the development of transformative learning through WIE. Each component of this model has implications for students, supervisors and coordinators and institutions of higher education. First, contrary to the generally held belief that co-operative education is purely constructivist, this study demonstrated that students were learning from a variety of perspectives: constructivist,

critical cultural, psychoanalytical, situative and enactivist (Fenwick, 2000). These perspectives shaped and influenced the enablers of the students' transformative learning and how those enablers interacted with each other and were supported over time. This finding has implications for how students, supervisors and coordinators consider supporting students before, during and after each work term. Preparing students, supervisors and coordinators to be aware of these additional dimensions and that narrative, systemic and organizational critical self-reflection (Mezirow, 1998) can support this range of transformative learning during and after the experience.

Second, there was considerable agreement among students, supervisors and their coordinator that the enablers of transformative learning were opportunities to learn, to apply learning, to assess and reflect, student capabilities, supervisor, the team and a supportive environment. The strength and influence of these enablers did shift over time and by perspective demonstrating the dynamic and fluid nature of these systems. The implications of this are that each circumstance will have a unique set of enablers that have the capacity to contribute to a greater or lesser extent depending on circumstances. Students, supervisors and Coordinators need to be cognizant of the individual nature of each learning situation, set of enablers and change process.

Third, the dialectical and mediated processes that led to critical reflection shown in this model required student confidence and the agency to engage in these processes. A focus from the WIE program on developing critical pedagogy that encourages students to ask inquisitive questions (Trede, 2012) that would lead to further discussion and allow students to explore these dimensions might be helpful as would supporting conditions where supervisors and coordinators would welcome these questions. These processes also

required a supportive environment and time. Taking a broad view of a supportive environment includes WIE program faculty and staff as well as coordinators, students supervisors, co-workers, family and friends to provide the role-modeling, validation and respect for the co-op student. Assessments of student learning might include this broader perspective and ask students to assess others on the basis of the support they provided. For example, students could assess supervisors, their coordinator or faculty members on the support they received from them. This would provide a broad sociocultural approach to assessing learning that goes beyond the student's performance (Zegwaard & Hodges, 2003).

Institutions and organizations that want to integrate the learning from WIE experiences should consider building connectivity through boundary-spanning devices, knotworking and co-configuration (Engeström, 2009). Boundary-spanning could include more individuals than the student, for example researcher-in residence with industry and vice-versa. Knotworking could include more joint industry-university research projects. This study showed co-configuration occurring between the student, supervisor and workplace community. Further co-configuration could include the WIE community as an additional partner allowing for joint research, projects and teaching. An example of how this could result in community renewal is being enacted between Victoria University in Australia and their local community in a series of shared projects (Usher, 2012). Institutions have strengths in research-based problem solving and critical self-reflection among other things, sharing this with organizations could assist with organizational learning and renewal (Senge, 1992). Similarly, organizations have an external perspective and are

continuing responding to rapidly changing environments. Their insights could inform curricular renewal and institutional learning.

The model of transformative learning in WIE proposed here could form the basis of training for students, supervisors and practitioners in WIE. This would update and enrich programs that currently refer to Kolb as the sole theoretical framework for understanding learning in WIE. Other than a program at the University West in Sweden that focuses on WIL pedagogy and is intended for academics and practitioners (West, 2014), there is a need for training for students and supervisors that is theory based and considers WIE learning from a socio-cultural perspective. Similarly, training could be developed based on this model for WIE leaders and senior administrator who oversee WIE programs.

This study showed that Activity Theory and sociocultural considerations allow for the possibility of both personal and social transformation during WIE. While this could prove a powerful tool for change, recognition needs to be given that this change might not always be welcomed in workplaces (Campbell & Zegwaard, 2011) or institutions of higher education attuned to a transactional rather than transformational orientation (Van Gyn & Grove-White, 2011).

Conclusion and Further Research

This study took a multi-perspective approach to the question of what enables transformative learning by seeking the insights of students, supervisors and Coordinator. While the findings confirmed previous work on the importance of reflection-in-action and reflection-on –action as part of the dialectical and mediated processes that result in transformation, the setting of WIE and the simultaneous consideration of the student, supervisor and Coordinator perspectives have not been previously researched. The study

confirmed that workplaces are powerful sites of learning, that positive emotional supports are as important in workplaces as in classrooms and that taking a sociocultural view provides a broad scope for considering how transformative learning occurs. The study expanded the zone of proximal development to include players from the WIE and workplace Activity Systems as well as family and friends. The study also factored in time, as a function of the past, present and future.

This model should be put to the test by other researchers and in other contexts to test its robustness. The central question for this research was the enabling of transformative learning, it might be of interest to test other outcomes worthy of being enabled. This study only considered the learning that occurred during the span of one work term, conducting a longer study that included classroom terms as well as work terms would add to our understanding of the integration of learning. The function of time, and the life-long learning impact of transformative learning during WIE, could be furthered studied by researching alumni of programs rather than students actively situated on work terms. A study that examines the Activity System of the co-op coordinator would add to our understanding of what practitioners in that role require for their transformation. Finally, the researcher, students, supervisors and Coordinator in this study all came from similar cultural backgrounds, of interest would be to examine this questions with participants from other cultural contexts.

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