Exploring conditions for transformative learning in work-integrated education

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A qualitative study was undertaken that explored the conditions for transformative learning in cooperative education as a form of work-integrated learning (WIL), towards the development of a theoretical model. Four case studies were analyzed based on interviews with WIL students, supervisors and their co-op coordinator. The findings revealed that the enablers most involved in contributing to transformative learning were: opportunities for work and learning, a supportive environment, student capabilities, co-workers, supervisors, and assessment and reflection practices. Furthermore, the integration of these transformative outcomes into the WIL academic program or workplace was dependent upon the time and value given to transformative processes, institutional requirements and a positive emotional environment. The implications of these findings are that WIL 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 WIL as an interaction between two systems opens up possibilities for innovation and renewal in our WIL programs and workplaces. (*Asia-Pacific Journal of Cooperative Education, Special Issue, 2015, 16(2), 137-144*)

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Across the globe, hundreds of thousands of students are engaged in work-integrated learning (WIL), 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).

Previous practical and theoretical examinations of WIL are lacking in several areas. 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). Kolb's theory, upon which WIL 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). Finally, transformational learning theory (Mezirow, 1991) is relatively underdeveloped (Van Gyn & Grove-White, 2011) and not considered in the context of WIL. Doing so would add to needed theory building for WIL (Bartkus & Higgs, 2011). Without a deeper understanding of the conditions and factors that lead to transformative learning in WIL, 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 re-integrated with the WIL system, we limit the opportunity for our institutions, workplaces and students to continue to learn after the WIL experience is concluded, and thus be responsive to the potential for change – both at the individual and social level.

Activity theory (Engeström, 1987), provided a fresh look at WIL and addressed these issues by considering WIL 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 WIL as

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an interrelated, interactive activity system. Activity theory considers activity systems as being: artifact 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 WIL. 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, the outcome of interest in this study, 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. 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 WIL.

The intention of this research was to explore the multidimensional nature of the conditions of WIL 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 employer supervisors and coordinator from the same co-op program at the university at the beginning and end of one work term during the summer of 2013 (Yin, 2003). Each participant was asked to identify examples of when they had experienced transformative learning (in the case of the students) or when they had witnessed co-op students having transformative learning experiences (in the case of the employer supervisors and coordinator). For each example of transformative learning the interviewees were asked to describe what had enabled that transformative learning; whether

from the WIL academic program or the workplace or other. These enablers were categorized as tools, rules, community or division of labour (DOL). The participants were then asked how they would rate the enabler on a scale of 1 to 5 from strongest enabler to weakest enabler. The Kelly Repertory Grid (Adams-Webber, 1979; Beail, 1985; Hunter, 1997; Kelly, 1955; Reger, 1990) was used as a tool to elucidate these experiences and constructs (enablers), and to rate those enablers on a scale of 1 to 5. The transformative learning experiences were categorized according to five perspectives: constructivist, critical-cultural, psychoanalytical, situative and enactivist (Fenwick, 2000). Narrative analysis was conducted on the interview transcripts to identify latent themes. Aggregated data from the coordinator, student and employer supervisor interviews were analyzed. Activity theory, which theorizes that expansive learning is a result of a dialectic, mediated process embedded in the socio-cultural context of an activity system (Engeström, 1987), provided the theoretical framework (see figure 1) to interpret these enablers and their relationship to the conditions for transformative learning.

Figure 1 shows the WIL academic program and workplace activity systems in this study where the student is the subject from the WIL academic program system and the employer supervisor the subject from the workplace system. They interact together through the shared object of the WIL experience with an outcome of transformative learning.

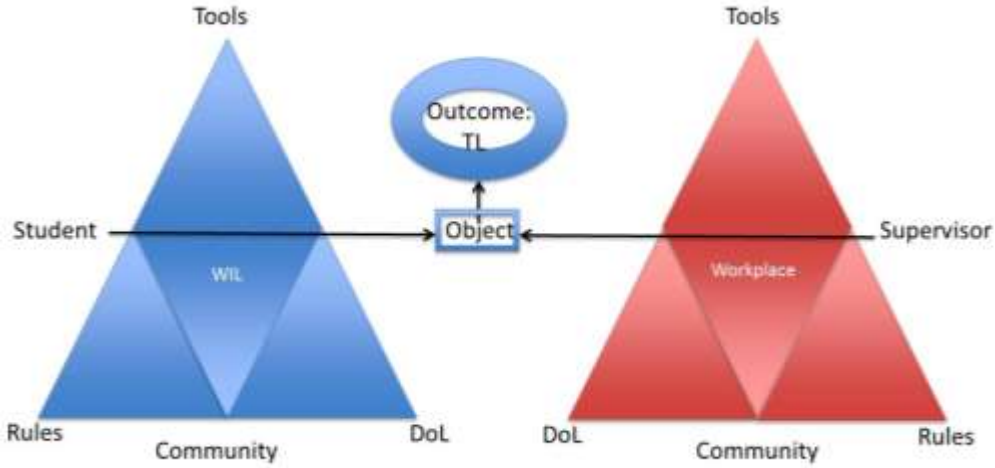

FIGURE 1: Model of both WIL and workplace activity systems with shared object and outcome of transformative learning (TL) (McRae, 2014)

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 support of the academic program and the workplace and also encompassed family and friends, suggesting an expanded Zone of Proximal Development (Vygotsky, 1986). This support was more than the provision of encouragement; it included respect, validation and role modeling. 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 & Lee, 2007).

The time dimension includes the historicity (Engestrom, 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 one to time two 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, they might need to develop their own resources, identify their 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.

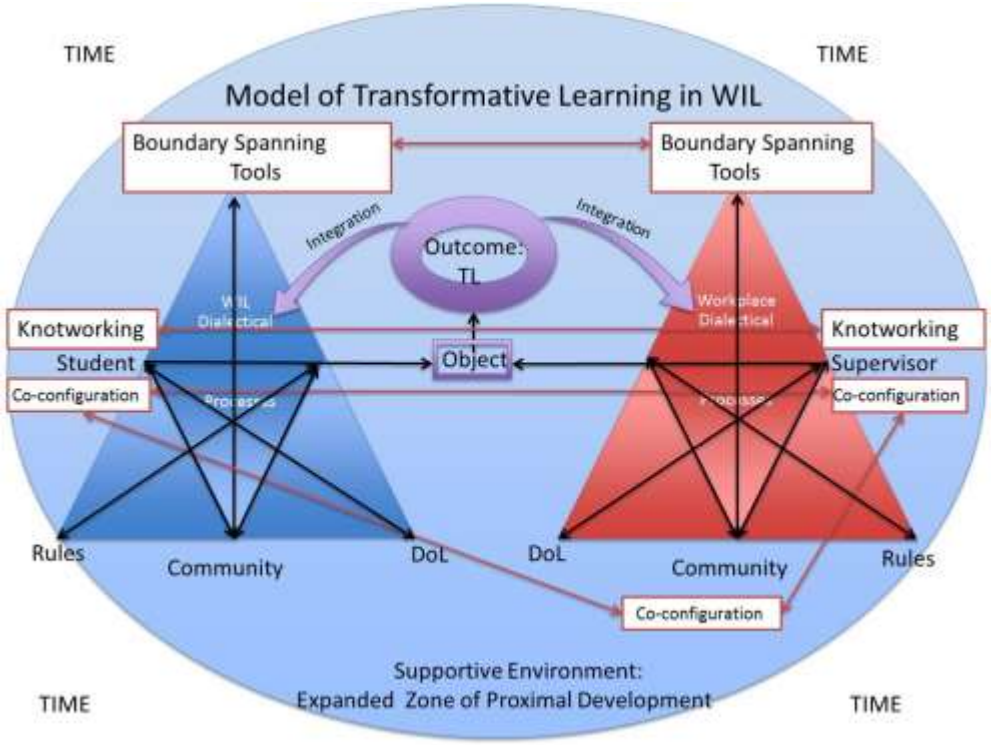

FIGURE 2: A model for transformative learning in WIL (McRae, 2014)

In summary, this study demonstrated that a theoretical model for transformative learning in WIL, as depicted in figure 2, is comprised of the following elastic dimensions: first, dialectical, mediated processes that occurred within the WIL 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 WIL. Each component of this model has implications for students, supervisors and coordinators, and institutions of higher education. Contrary to the generally held belief that cooperative 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). 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.

In addition, 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.

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 WIL 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 WIL 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.

Institutions and organizations that want to integrate the learning from WIL experiences could 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 WIL community as an additional partner allowing for joint research, projects and teaching.

The model of transformative learning in WIL proposed here could form the basis of training for students, supervisors and practitioners in WIL. This would update and enrich programs that currently refer to Kolb as the sole theoretical framework for understanding learning in WIL. There is a need for training for students and supervisors that is theory based and considers WIL learning from a socio-cultural perspective. Similarly, training could be developed based on this model for WIL leaders and senior administrator who oversee WIL programs.

This study showed that activity theory and sociocultural considerations allow for the possibility of both personal and social transformation during WIL. 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. 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 WIL 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.

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