Self-directed learning in a socioconstructivist learning environment

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Abstract
Self-directed learning is an essential skill to be acquired for the promotion of life-long learning. In this study, a socioconstructivist learning environment was designed for an Instructional Design and Development module to facilitate self-directed learning within a higher education setting. The course supported a student-centred and self-directed approach, integrating technological, pedagogical and content knowledge. Findings from interviews, online document analysis and observation provided evidence that self-directed learning was empowered through learning tasks that support constructivist collaboration in both physical and virtual learning spaces. The participants inquired new skills, knowledge and attitude through self-directed learning in a blended learning environment. Web technology platforms such as Moodle online discussion forums, Google Docs and Wikispaces empowered self-directed learning among the adult participants. The processes and conditions that facilitate self-directed learning are discussed in this paper.

Keywords: self-directed learning, socioconstructivist, learning environment, instructional design

1. Introduction
The 21st century is characterized by the ubiquitous forces of globalization, which drives the existing knowledge-driven economy, the inter-connectivity and digital revolution. Survival skills become obsolete over a couple of years due to the decreasing half-life of knowledge. This would mean that what is taught in formal institutions of learning have to be unlearnt or re-learnt over the years. Individuals need to be committed to lifelong learning and this is only possible if individuals are motivated with self-directional skills. Self-directed learning refers to a learner’s autonomous ability to manage his or her own learning process, by perceiving oneself as the source of one’s own actions and decisions as a responsibility towards one’s own lifelong learning. In an instructional context, it means that students are able to take initiative, with or without the teacher, in making decisions concerning their own learning. Pedagogies such as problem-based, case-based and team-based learning are shown to develop self-directed learning skills (Blumberg, 2000).

A social constructivist learning environment enables the construction of new understanding and knowledge through the interplay of social and cognitive contexts with others (Saxe, 1991). Among the features of a social constructivist learning environment are the design of activities that are directly relevant to the application of learning within a similar culture (Brown, Collins & Duguid, 1989), discursive interaction between teachers and students (Laurillard, 1993) and collaboration among peers in non-competitive activities (Jonassen, 1994). Support and
guidance from more knowledgeable peers or experts is believed to promote student capacity and capability for learning within Vygotsky’s (1978) concept of ‘Zone of Proximal Development’.

2. Research Design and Methodology

This study employs a design and development research design (Richey & Klein, 2007). The researchers design and develop a socio-constructivist learning environment for an Instructional Design and Development module, integrating technological, pedagogical and content knowledge to support self-directed learning of the 14 participants, who are Master in Instructional Technology students, throughout the 14-week semester.

2.1. Pedagogical Content Design

The first stage of design is to analyze the learning capabilities and needs of the participants via a survey questionnaire, which includes the learners’ profile, demographic information, experience with content (instructional design) and technology (tools, online learning or teaching) and participants’ perception on roles and responsibilities in an instructional setting. The front-end analysis provides input to the instructors to scaffold and personalize participants’ self-directed learning in a socio-constructivist learning environment. The significant feature of the designed socio-constructivist learning environment is the promotion of collaboration among learners and practitioners in a societal context (McMahon, 1997). The focus is on learner activity rather than teacher activity. Thus, while the instructor create the broad aims of the course in terms of both content learning and transferable skills outcomes, learners are expected to actively discuss, reflect, adapt, evaluate and interact within the community of inquiry (Atherton, 2009; Garrison and Anderson and Archer, 2000). Their self-directed conversation with self and the community of learners is what that contributes to meaningful and deep learning.

The responsibility of the instructor is to design for the constructive alignment of learning activities, assessment tasks and intended learning outcome (Biggs, 2003). Learning activities are then designed to engage students in active learning, in order that meaning linkages are created between knowledge, skills and experience (Choi & Hannfin, 1995). The learning activities are assessed formatively for the purpose of providing better structure for self-directed learning and for the purpose of improving learning experience. A blended learning approach is employed where weekly classes are held in a multimedia laboratory equipped with internet-enabled computers, the lecturer and learners discuss the problem scenarios and activities (in tasks and assessments) during classes. To empower self-directed learning and understanding, there is minimal direct instruction; students undertake problem-based projects in small groups where they are required to step into realistic and authentic instructional design environments.

2.2. Technological Content Design

Self-directed learning is extended through the use of web technologies such as wikispaces, moodle, google docs and facebook, which functions as the central learning spaces to encourage initiative and autonomy in building instructional design skills and knowledge. For example, self-directed learning with guiding comments from peers and lecturers are negotiated within a shared learning contract hosted on Google Docs. In order to promote self-directed learning, learners were given the choice to diagnose and formulate their personal learning goals (given the broad course learning goals), to identify human and material resources for learning what is of interest and relevance to them, to choose and implement appropriate learning strategies and to evaluate their learning outcomes. The shared learning contract is an instructional strategy to egalitarian power sharing in the classroom. It is used as the backbone for structuring two largely self-directed assignment projects. Both assignments: The Instructional Video and Research and Development Instructional Design Project requires the learners to pick up various instructional design competencies in planning, analysis, design, development, implementation, management and foundational professional (IBSTPS, 2010). Evidence of reflection, collaboration, participation is assessed as they work on the assignment projects. Assessment is a shared venture to promote self-directed and formative evaluation. Students are asked to give peer feedback and self evaluation in their shared learning contracts and instructional video
presentation. For their Instructional Design project, the students learn to gather and analyze feedback from real-life clients and audiences, other than their peers, self and teachers.

Wikispaces is used by the groups as a tool for project management under remote surveillance from the instructors. The documented process enables the self-directed efforts of the groups to be monitored, facilitated and benchmarked within the learning community. Meaning and understanding is negotiated through a social learning process with each other and different objects in the learning environment. Moodle is the course learning management system, also used as a repository for essential course readings, course documents, learner profiles and a formal communication platform using the discussion forum. This learning management platform enables both teachers and students to share artifacts, so students become contributors and not just passive recipients of knowledge. As self-directed learning progresses, some groups initiated supplementary communication via facebook; which was not required from the instructors.

Essentially, the design harnesses appropriate technology tools, intervening pedagogical support, motivation and probing content knowledge, with the goal to empower inquiry and negotiated construction of instructional design skills and knowledge.

3. Findings

Analysis of data from observations, documents and interviews show a positive self-directed learning curve (Fig. 1) whereby participants inquired new skills and knowledge as they completed assignment and assessment tasks. The self-directed learning curve depicts the students’ self-directed effort in acquiring new skills and knowledge over a specific period of time. Most of the participants experienced a self-directed learning curve that was ‘uncomfortable’ at the beginning, followed by a steep learning curve as they were obliged to complete tasks independently within a specific timeframe, and finally manifesting content and digital learning skills and knowledge at task completion.

The struggle at the initial stage was the need for explicit guidance. It was not easy to emerge from the individual’s comfort zone; of being accustomed to direct lecturing methods. As exclaimed by a participant, due to her own “experience in school” where “students is being spoon feed”, she is trying very hard to “adapt (to) self-directed learning...so that can gain something with your own effort”. It was a steep learning curve; many times the students feel as though they have reached an ‘impasse’, but given the constructivist support of the online learning community, participants gradually learned the skills of “adapting to new environment of learning”. In this blended learning environment, self-directed learning involves the adaptation to new content, new pedagogy and new technology: “i am now understand what is the goal of the learning contract.. but now i’m having problem in using the google docs...”.

![Figure 1. Participants’ Self-Directed Learning Curve](image_url)

Some participants reflected and shared personal strategies for self-directed learning in completing assignments. Many participants also quoted transferable skills such as collaborative / team work skills, organization skill, critical thinking, humility, responsibility, helpfulness and self-discipline learnt as a result of the self-directed instruction:
In terms of attitude, most have shown transformed acceptance for self-directed instruction and learning, feeling “more responsible towards my own learning” and being “reminded (of) how reflection is essential”.

On the other hand, content knowledge and skills were demonstrated through the design and development of ID projects. The content learning outcomes of applying ID processes to solve problems related to teaching and learning, using an ID model to design, develop and evaluate a project of own choice and managing an ID project were achieved through self-directed learning:

At the same time, technology skills were integrated as students learnt video editing skills self-directedly (independent of direct lecture). Peer tutoring took place as more able students gave free advice and tutorials to students who lack basic video editing skills and knowledge. Students also learnt to navigate and communicate using new web tools such as Google Docs, Wikispaces, Moodle and Facebook. Technical problems were solved collaboratively and self-directedly. It was gratifying to know there was some amount of transferred learning, which provided some indication of successful self-directed learning in view of lifelong learning.

4. Discussion

The implementation of a self-directed instructional design may not appeal to all learners. The uptake for self-directed learning could vary according to students’ learning orientation, especially if they are resistant learners (Martinez, 2002). Initial disorientation as a result of the self-directed design may be daunting, but this phase is found to be a significant element of a more rewarding transformation towards new found freedom in self-directed learning, which may comprise a combination process of the following:

1. a disorientating dilemma
2. self-examination with feelings of fear, anger, guilt or shame,
3. a critical assessment of assumptions,
4. recognition that one’s discontent and the process of transformation are shared,
5. exploration of options for new roles, relationships and actions,
6. planning a course of action,
7. acquiring knowledge and skills for implementing one’s plan,
8. provisional trying of new roles,
9. building competence and self-confidence in new roles and relationships,
10. a reintegration into one’s life on the basis of conditions dictated by one’s new perspective.

(Mezirow, 2003)

In view of the steep learning curve to self-directed learning, this study considered the development of the self-directed learner from a ‘whole-person’ perspective. By asking students’ to reflect on their learning orientations, whether they are typically resistant, conforming, performing or transforming learners (Martinez, 2002), the researcher helps them to identify, understand and harness their learning needs in their preferred style while adapting to required style as required in real-life situations. Scaffolds, in terms of a technology-integrated social constructivist learning environment, are incorporated in the self-directed instructional design. Through engaging in the web tools described, the students are able to develop skills of cooperation, negotiation, interaction and reflection, which are useful skills that support lifelong learning. Online technology is able to facilitate self-directed learning as students are free to engage in student-student dialogue with minimal mediation from the teacher. Deeper understanding and learning is also facilitated as knowledge is built within a community of procedural facilitation and support (Lamon & Scardamalia, 2002).

Finally, the role of the teacher must change from ‘the-one-with-power’ to ‘the-one-with-shared-power’. This empowers self-directed learners to be active participants rather than passive recipients of knowledge. The teacher designs a socio-constructivist learning environment to challenge, motivate and support students to take initiative in pursuing their learning goals in a community of inquiring learners. The basis for self-directed instructional design is to involve students in the awareness and self-assessment of their learning needs, to plan, develop, apply strategies and utilize earning resources; and to do so self-directedly through discovering what they already know and thence inquiring what they are able to learn via shared meaning construction. The quality of interaction with peers and teachers is found to have a major influence on students’ motivation to persist through self-directed learning, especially among learners who need more guidance (Wigfield, Eccles & Rodriguez, 1998).
5. Conclusion

This study is a design of self-directed instruction for the acquisition of skills and knowledge related to content and also 21st century learning skills for lifelong learning. The design is context specific, taking into account the personalized needs of the learners to facilitate the development of scaffolds in the socio-constructivist instructional design from the choice and application of online technology, learning activities, assessment tasks, teachers and students' roles and responsibilities and the management of feedback and evaluation. Ultimately, it is the learner’s responsibility to claim control of their own learning. Other than external factors designed to promote self-directed learning, students need to take their own initiative to deepen their understanding for the acquisition of skills and knowledge. Hopefully, all learners would positively embrace self-directed learning as a participant describes:

"...have (to possess) a ‘go getter’ attitude, and also to be able to direct their own learning...

it’s up to the students to explore everything to meet the requirements of the assignment."

References


