



ASSESSING TRANSFORMATIONAL LEARNING IN ONLINE PROFESSIONAL PROGRAMS: METHODOLOGICAL APPROACHES AND CHALLENGES

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Introduction

In the last decade, online education has increased access to institutions of higher education and equity for non-traditional populations. Developments in ICT have led to an augmented number of online professional programs for adults, where adult practitioners look for accreditation or advanced degrees. Online professional programs offer students professional growth and attempt to connect theory and practice or theory, research and practice, with goals of transformation in thought, behaviour and action. In online professional programs where the educational design carefully scaffolds and aims for transformation, students should ideally be better able to make connections between practice and theory or research because they remain embedded in their practice and their working environments as they continue their education. The impact of such programs is often reported as the impact for the individual and for their workplace, with the impact for the individual focusing on transformation as well as professional growth (Lester & Costley, 2010). In this paper, we will investigate transformational learning in online professional programs, paying special attention to how such transformation can be assessed.

Transformation in students' thought, behaviour and action in professional programs or in related work-based learning environments has been studied using methods such as student, faculty and employer interviews; observations and analyses of student work. Researchers have also proposed that transformational learning should be studied as a process and not as an outcome at the end of a course or program (Land & Meyer, 2010). However, in the online environment where faculty and researchers rarely meet students face-to-face and where the workplace is located in another state or country, research on the assessment of transformational learning becomes problematic. At the same time, the access to a record of all interactions in the online environment and learning products in digital format presents new sources of data and opportunities for research such as learning analytics. Given this situation, how can online professional programs assess that they are achieving what they set out to do? What existing methodological approaches can be applied to assess transformational learning in online programs or are new approaches needed?

In this paper we present two approaches to assessing transformational learning in online professional programs, discuss the shortcomings and benefits of each approach, and the general challenges associated with identifying a methodology for assessing transformational learning and implementing it in an online program. Furthermore, we depict the challenges faced when assessing transformational learning as a process at different points of an online program, and when using embedded assignments within a program. Our focus is on these methodological issues; we provide a brief description of the educational design of each program to provide context, but a detailed discussion of the educational design, albeit valuable, is beyond the scope of this paper. Given the increase in non-traditional students pursuing higher education opportunities through online programs, this paper addresses an important issue – that of assessing the impact of online learning for adults not just in terms of knowledge acquisition but in terms of learning outcomes such as changes in thinking, behaviour, action and identity.

Transformational Learning and its Assessment

Transformational learning aims for changes in an individual's perspectives (beliefs, attitudes and behaviour) that can be facilitated by critical reflection and critical discourse (Mezirow, 1998; 2003). Mezirow describes various phases within the transformational process – the introduction of disorienting information, self-examination, critical reflection on the first two areas and these leading to new plans of action, building of self-confidence and eventually a comfort level with new roles and ways of thinking (Mezirow, 1998). While he emphasizes that the learner should be willing to learn, Boyd and Myers (1988) assert that learners have to be receptive to the possibility of transformation and discern that existing premises and perspectives are no longer relevant for their future practice. In the case of online professional programs, students often enrol because they want to acquire new knowledge or ways of thinking, although some might enrol because they need the additional qualification. While some students might be defensive and cling to old ways of thinking or action despite disorienting information (Schwartzmann, 2010), the purposeful design of educational experiences can facilitate transformation.

More recently, “a transformed way of understanding, or interpreting, or viewing something” has been termed possible through a threshold crossing (Meyer & Land, 2003, p.4). Threshold crossings involve threshold concepts that are transformative because they lead to a changed outlook on a discipline or changes in personal identity, but are also integrative because the student connects previously unconnected issues to discover their “hidden interrelatedness” (Meyer & Land, 2003, p.4-5). Exposure to knowledge from a different area of discourse that contradicts what students already know and believe, or knowledge that is incoherent or incomplete becomes troublesome for the students. Land and Meyer (2010) describe transformation as a journey through preliminal, liminal and postliminal stages where the “state of liminality” (Meyer & Land, 2003, p.10) is where students struggle to integrate new knowledge or feel a loss of authenticity in their understanding before they can cross the

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threshold to reach new understanding or let go of old understanding. Once a student's understanding is reconfigured or transformed, this is irreversible and is marked by changes in discourse, actions and behaviour.

Assessing transformational learning: According to Land and Meyer (2010), transformational learning is not sequential, with the three states or new understanding constantly being negotiated and a subliminal mode underlying the transformational process. Thus any measurement approach has to take into account changes in thoughts, behaviour and action at various stages of the learning process and not only at the end. A broad spectrum of quantitative and qualitative methods has been used to assess transformational learning in the past such as student interviews, student biographies, surveys, open-ended survey questions, portfolios, logs, student journals, and concept maps (Land & Meyer, 2010). However, these mostly relate to courses, not to complete programs or to assessment that occurs consistently over semesters or years. Land and Meyer (2010) point out that transformational learning in *programs* needs to be studied to understand students' growth across courses. However, in online programs additional challenges arise. Firstly, online programs often comprise a sequence of courses where the courses may be excellently designed for individual learning outcomes, but the complete curriculum might not be aligned for program outcomes. In online professional programs that aim for transformational learning, activities and resources as well as online discourse and interactions across courses have to be carefully scaffolded for cognitive and ontological change. However, while existing face-to-face programs might be more difficult to redesign, the fact that several online professional programs are new makes it possible for them to be planned and designed in this manner. Secondly, students are working professionals situated at a distance, making it difficult to collect data that involves synchronous participation such as interviews or talk aloud protocols. At the same time, the digital record of student work and interactions provides rich sources of data to be analysed. In addition, researchers can assess transformational learning during the online study program, over multiple semesters and years with assessment methods that are built into the courses as "jewels in the curriculum" and using digital tools that help students "externalize" their thought processes (Land & Meyer, 2010, p.75).

The following sections present the design of two online professional programs for practitioners in social work and educational technology, respectively, that included assignments in courses as well as other methodologies to investigate transformational learning. The discussion section then compares the two approaches and their accompanying benefits and challenges, along with implications for further research in online professional programs.

Assessing Transformational Learning I: Online BA-Degree Program in Social Work

Educational Design

The online BA-degree program in social work “BASA-online” is offered to practitioners in the field of social work by Munich University of Applied Sciences, Germany. Students from a wide range of work backgrounds, enrol in the program to study in a networked learning setting that comprises of online modules and face-to-face modules. The online modules are offered in a learning management system, using a variety of additional learning technologies, and involve individual, pair and group work. A key design feature of the program is the embedded assignments: tasks that ideally link the content of the module directly with the students’ work experience. In addition, the educational design offers ample opportunity for the students to share their individual work experience within the learning community, trying to support the students’ trajectories toward becoming reflective practitioners (Schön, 1983). As students have professional experience in very different fields, it becomes challenging to build on their work experience and to support all students in linking theory and practice across the multiple modules in the program that are taught by different faculty members. To facilitate the interweaving of academic knowledge with students’ professional experience, a special online module aims especially at enabling the students to reflect on their threshold crossings and possible transformational learning incidents in the overall program. As an embedded assignment for this module, students develop an individual e-portfolio, show-casing their learning insights and outcome within the module and the program, reflecting on the underlying processes, challenges and approaches to confront these challenges (for details cf. Arnold & Kumar, 2014; Arnold, 2012). For show-casing and reflection within the e-portfolio students use text, images or audio and video elements.

Methodology

To assess transformational learning incidents and threshold crossings in the program, students’ e-portfolios were analysed. A pilot analysis of the portfolios was undertaken to investigate whether students experienced transformational learning during the program, with no extra funding for impact research (Arnold & Kumar, 2014). The research design followed Carley’s (1993) recommendations for content analysis. Taking into account the importance of defining initial indicators, we looked at the goals of the program and scrutinized the comments from lecturers who had previously taught in the program to develop six initial indicators:

1. Relating content to one’s own person,
2. Relating content to one’s professional experience,
3. Commenting on the relationship between theories and practice in social work,
4. Describing the significance of scientific knowledge for profession,
5. Changed way of thinking,

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6. Changed way of acting.

We also remained open to new indicators that might emerge from the data. Our coding approach was entirely qualitative, i.e. we searched for the existence of any of our indicators and did not introduce a quantitative measurement in terms of counting the prevalence of a certain indicator. The unit of analysis was a sentence or a graphic in the e-portfolio. To make sure that we were “coding for what we want to code for” (Carley, 1993, p.83) and as a way to reach consistency, we discussed the coding. In addition, we paid particular attention to any coding that seemed problematic to any one of us at the start and revisited the coding mutually. Introducing a second perspective also helped to gain trustworthiness in the process of analysis.

Findings

The analysis of 21 e-portfolios clearly showed traces of threshold crossings and transformational learning. Students reported that they connected new knowledge to their personal and professional life and changed their perception of the relationship between their situated-in-practice work knowledge and newly acquired theoretical concepts. They valued the enrichment of perspectives and acknowledged the intricate interwoven nature of the theory-practice relationship rather than the duality of the two genres of knowledge that was at the forefront when they started the program. In sum, the study program seemed to have made students cognizant of the significance of academic knowledge for professional social work. For many students their aspirations for their future professional role became more realistic and nuanced, from an “all-mighty angel” (“Lichtgestalt”) to a competent advocator and mediator for people in challenging life situations. Although the e-portfolios were self-reports, they gained credibility by very individual examples and detailed situated descriptions of the changes in thought, attitude and values, deeply grounded in students’ particular work and life situations.

Regarding the methodology as such the set of indicators had to be extended as many incidents of “troublesomeness” emerged, when students struggled with new concepts, coming to terms with them in their own perceptions and cognition or when transferring them into their practice, being confronted with conflictive reactions of colleagues. This indicator was not originally applied to the material but corresponds to the Meyer and Land’s (2003) notion of troublesomeness. In addition, the fact that students were granted many degrees of freedom when creating the e-portfolio resulted in challenges with coding diverse language and writing styles as well as highly differing use of multimedia elements in the e-portfolios.

Assessing Transformational Learning II: EdD in Educational Technology

Educational Design

The goal of the Doctor of Education (EdD) in Educational Technology at the University of Florida is for practitioners to identify educational problems, apply theory and research to problems of practice, and enhance educational environments based on data-driven decisions

and research. The online cohort-based program is structured as two years of intensive coursework followed by individual mentoring of practice-embedded research dissertations. It enrolls educational technology professionals from multiple disciplines who work in schools, post-secondary, corporate, non-profit, and other educational environments in the US and abroad. The design of the program is grounded in situated and transformational adult learning that is embedded within students' professional contexts (Brown, Collins & Duguid, 1989; Mezirow, 2006). Given the diverse backgrounds of the students, the program is designed to guide students to build on prior knowledge in their discipline, acquire knowledge in the field of educational technology and specialize in an area in educational technology that corresponds to their professional interests. Required courses systematically introduce students to theories and research in the field, which students critique and discuss in the context of their prior knowledge, own purposes and values, and professional context, thus making connections between theory, research and practice. The cohort structure of the program provides students opportunities to engage in reflective discourse and simultaneously be exposed to different points of view (Mezirow, 2003). Authentic learning experiences, expert modelling and mentoring, and exposure to research in educational technology are integrated using both synchronous and asynchronous technologies to build an online community of inquiry over two years (Kumar & Dawson, 2012). Such activities are intended to bring about cognitive, epistemological and ontological transformation throughout the program and not just in one course. Students produce artefacts that are relevant in the original contexts of identified problems (Brown, Collins & Duguid, 1989) and represent their learning and professional growth in both text-based and non-text-based formats. The educational design of the program emphasizes the connections between theory, research and practice in students' exploration of literature, reflection on new knowledge and implementation of research in their dissertation.

Methodology

Traditionally, the impact of participation in professional graduate programs for learners was expertise, confidence, recognition, responsibility, and stature in their workplace (Lester & Costley, 2010). Based on these categories, data collection in the online program focused on external indicators of threshold crossings such as application of knowledge, changes in behaviour, and professional growth, with attention paid to the role of learning from the program. Due to the importance of collecting data on transformational learning at different points of the process, research with the first cohort of students in the online program involved virtual semi-structured interviews (n=19) during the 2nd year, CV analysis (n= 19) to corroborate interview data, focus groups with 18 students during the 3rd year, and virtual interviews after the students graduated from the online program (Kumar, 2014). Interview and focus group questions aimed to investigate whether students experienced transformational learning as indicated in their behaviour or professional growth and application of knowledge in their practice. Inductive analysis (Hatch, 2002) was conducted by

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two researchers for each set of qualitative data and member checks, data triangulation, and follow-up emails ensured trustworthiness of data.

Findings

The data analysis revealed that students reported a clear change in their thinking, actions and behaviour related to educational technology use and research, with students providing concrete examples in the following areas: a) students' application of learning from the program in the form of technology integration as well as teaching materials, courses, professional development and workshops; b) new actions taken by students in participating, presenting and proposing papers to organizations or conferences; c) students' changed approach to being research-based and theory-based, using and sharing research and applying research or data-driven approaches in their practice; d) students' changed behaviour with peers, administration, superiors at the workplace and scholars; and e) students' changed self-perception in terms of confidence, competence and ability to take risks (Kumar & Dawson, 2012; Kumar, 2014).

In terms of methodology, the qualitative procedures revealed several themes in terms of impact that had not been anticipated when the research was planned. Furthermore, the research had focused strongly on products that evidenced changed action (materials, modules, workshops, conference presentations), changes at the workplace as a result of the program, and changes in behaviour, but in the data collected, the students were also trying to describe internal changes, their own struggles with change and their surprise at how they had changed. Simultaneously, virtual interviews with the second cohort of students proved difficult due to differences in time zones, students' work and family commitments and lack of funding. Thus, for the third cohort of students, virtual artefacts that students anyway created as assignments were purposefully focused on transformational learning. Students created a virtual artefact during their first semester about their professional journey, knowledge of their area of specialization and perceptions of research, educational technology and their role in their workplace. At the end of the second year, students will again be asked to create a virtual artefact with the same instructions. A set of indicators will be created based on program goals and from research in the BASA-online program and the pre- and post-artefacts will be analysed for crossings and transformational learning.

Discussion: Assessing Transformational Learning in online programs

In this section we discuss (i) the differences in the two approaches adopted by the two online programs to assess transformational learning with regard to their special affordances as well as disadvantages and (ii) the challenges associated with assessing transformational learning in online programs common to both programs.

Comparing the approaches

For assessing transformational learning, in the online doctoral program in Educational Technology, a research plan was created to collect data using various instruments (interviews, focus groups, cv analysis) and the persons conducting the interviews or focus groups were not part of the online program. Data collection thus focused on external indicators of transformational learning in the form of student-reported changes in behaviour, actions, materials or educational experiences created, and professional growth. This approach can be characterized as “analysing from the outside”. Although the research design was conceptualized by the program director in collaboration with researchers outside the program, it included external lenses and input and furthermore, used proven methods of data collection. While this approach was quite successful, it did not reflect the students’ internal struggles or thinking. Simultaneously, students were creating artefacts during each semester that externalized students’ thinking or transformation but that were not being analysed. Thus the researchers decided to re-examine the instructions for course artefacts that required students to connect theory, practice, and research within the program, and focus them further on transformation and program outcomes in order to be able to analyse them later, enriching the “outside approach” with an “analysis from within”. Another downside of this approach is that it requires a lot of resources and time, both from researchers as well as students. Such methods of data collection are often an additional demand on the budget and professional students’ time, in this case further complicated by the reality of a geographically dispersed cohort.

In contrast, for assessing transformational learning in the BASA online program the program director did not adopt an external approach to data collection, but employed an internal one. The program contained “jewels in the curriculum” (Land & Meyer, 2010, p.75) or assignments that served to evaluate to which degree students reached the learning goals of connecting theory and practice. One example of this was the task of creating an e-portfolio reflecting student’s own learning trajectory. The researchers created a framework for analysis and applied it to the artefacts to identify transformation during the program. This approach did not require resources for data collection or additional time invested in the research by the students, for whom time is a very scarce resource. On the other hand, in this method of analysis students’ different affinity to the digital format of an e-portfolio might interfere with the discernibility of the coding concepts in the material. Researchers thus would have liked the possibility to validate results with an external approach, such as in-depth interviews with students. In such interviews it would also be possible to check results that stemmed from the analysis of very special e-portfolios; e.g. portfolios that used a high level of multimedia elements or used a more distanced writing style. These factors might have unduly influenced the coding and the interpretation of data.

In general, both approaches were found to be reasonably successful, and moving forward, the researchers see merit in a combination of the internal and the external approach, namely, collecting data in a traditional manner using surveys, interviews, or focus groups, and also

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analysing artefacts or student work submitted during the program for instances of transformation.

Challenges common to both approaches

Regardless of whether the approach used is a research plan or the analysis of artefacts embedded as assignments, several challenges emerge when attempting to assess transformational learning in online professional programs that are heightened when participants are professional adults with families and other care obligations. Access to participants and the scheduling of data collection pose problems due to time zones and the fact that participants might not be able or willing to invest extra time. Qualitative data collection in virtual environments (e.g. Skype, phone calls), while becoming more common, is accompanied by limitations such as not being able to document body language or facial expressions, interpret pauses or tone of voice, etc. From a methodological perspective, when collecting data at various points in an online program, the availability of resources is essential for a longitudinal study and there is a danger of exhaustion when asking students to participate in data collection every few months.

Of even more concern are the problems of student self-report and researcher bias. When students are asked about their professional growth and actions taken during an online professional program, they often want to present themselves and their behaviour or actions in the best light possible. Often researchers cannot follow up with the students' workplace, so they have to rely on the students' self-reporting. The doctoral program attempted to triangulate the data by requesting evidence of products created by students and by reviewing students' CV or professional websites, but that process presumes that students update those sources regularly. Using data sources to validate changes in behaviour, a changed approach to theory or research, or changes in identity is even more difficult. Embedded assignments in the curriculum that require students to keep a journal or create artefacts to report changes in their thinking are also essentially student self-reports because the students know the journal is being kept for that purpose and each student can be identified. The fact that the journal or artefact is part of an assignment in the program that will be graded complicates the issue even further and raises ethical considerations for the research. In such cases, the collaboration with external researchers who are not involved in the online program can be useful. Employing concept maps or artefacts that require students to solve a particular problem and analyse whether their approach has changed at various parts of a program could also be a solution.

In the case of the two online programs discussed in this paper, the program directors who led the educational design also directed the research. Although they were not directly involved in data collection, they contributed to the analysis of the data along with other researchers. Their interpretation of the results might have therefore been skewed by their involvement and investment in the program. It is also possible that students consciously or unconsciously provide data that they think will please the researchers, because they do not want to be critical of their study programs.

Conclusion

This paper presented two different approaches as possible methodologies for assessing transformational learning in online professional programs. For the online doctoral program in Educational Technology, a research plan was created to collect data using various instruments, representing an external approach. In contrast, the BASA online program adopted an internal approach to data collection. The program contained “jewels in the curriculum” (Land & Meyer, 2010, p.75) or assignments that served to evaluate the learning goals and that were analysed using a research framework. Both these approaches were found to be reasonably successful, but had their respective pitfalls and downsides. Given adequate resources, a combination of the methodologies would increase validity of results in both contexts and further work will proceed in this direction. On the other hand, some interfering factors related to assessing transformational learning in online professional programs seem to be difficult to eliminate altogether. A further area for research that was outside the scope of this paper is to investigate how the educational designs lead to transformational learning outcomes, and unpacking which elements of educational designs facilitate transformational learning most.

References

1. Arnold, P. and Kumar, S. (2014). Crossing Professional Thresholds with Networked Learning? An analysis of student e-portfolios using the threshold concept perspective. In S. Bayne, C. Jones, M. de Laat, T. Ryberg, & C. Sinclair (eds.), *Proceedings of the 9th International Conference on Networked Learning 2014*, (pp. 9-16).
2. Arnold, P. (2012). *Reflective Practitioners via e-Portfolios? Innovative Formats of Teaching and Assessment in Degree Programs of Social Work*. EDULearn 2012: Proceedings[CD ROM]. International Association of Technology, Education and Development.
3. Boyd, R.D. and Meyers, J.G. (1988). Transformative Education. In *International Journal of Lifelong Education*, 7(4), (pp. 261-284).
4. Brown, J.; Collins, A. and Duguid, P. (1989). Situated cognition and the culture of learning. In *Educational Researcher*, 18, (pp. 32-42).
5. Carley, C. (1993). Coding Choices for Textual Analysis. A comparison of content analysis and map analysis. In *Sociological Methodology*, 23, (pp. 75-126).
6. Hatch, J.A. (2002). *Doing Qualitative Research in Education Settings*. Albany: SUNY Press.
7. Hays, M. (2008). Thresholds and transformation. In *European Journal of Management*, 8(3), (pp. 24-46).
8. Kumar, S. (2014). A systematic approach to the assessment of impact in a professional doctorate. In *Higher Education, Skills and Work-based Learning*, 4(2), (pp. 171-183).

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9. Kumar, S. and Dawson, K. (2012). Exploring the impact of a professional practice education doctorate in educational environments. In *Studies in Continuing Education*, 35(2), (pp. 165-178).
10. Land, R. and Meyer, J. (2010). Threshold Concepts and Troublesome Knowledge (5): Dynamics of Assessment. In J. Meyer, R. Land & C. Baillie (eds.), *Threshold concepts and transformational learning*, (pp. 61-80). Rotterdam, NL: Sense Publishers.
11. Lester, S. and Costley, C. (2010). Work-based learning at higher education level: value, practice and critique. In *Studies in Higher Education*, 35(5), (pp. 561-575).
12. Meyer, J. and Land, R. (2003). *Threshold concepts and troublesome knowledge: linkages to ways of thinking and practising within the disciplines*. Occasional Report 4, ETL Project, Universities of Edinburgh, Coventry and Durham, 2003.
13. Mezirow, J. (1998). On critical reflection. In *Adult Learning Quarterly*, 48(3), (pp. 185-198).
14. Mezirow, J. (2003). Transformative learning as discourse. In *Journal of Transformative Education*, 1(1), (pp. 58-63).
15. Mezirow, J. (2006). An overview of transformative learning. In P. Sutherland & J. Crowther (eds.), *Lifelong learning: Concepts and contexts*, (pp. 24-38). New York: Routledge.
16. Schön, D. (1983). *The reflective practitioner. How professionals think in action*. New York: Basic Books
17. Schwartzmann, L. (2010). Transcending Disciplinary Boundaries. In J. Meyer, R. Land & C. Baillie (eds), *Threshold concepts and transformational learning*, (pp. 20-44). Rotterdam, NL: Sense Publishers.

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