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Can curriculum managers' reflections produce new strategies through Moodleⁱ visions and resources?

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This article presents a critical action research of three curriculum managers (managers) who used Moodle visions to manage their school curriculum at a school in Durban, South Africa. The curriculum managers' main aim of using Moodle was to improve teacher and learner performance. The purpose of the study was to explore the managers' reflections on their use of visions of Moodle for curriculum management. The managers' reflective journals, one-on-one semi-structured interviews, and focus group discussion were used for data generation. Purposive and convenience samplings were used to select the three most easily accessible participants. The managers' reflections on curriculum management through Moodle visions (personal, social and professional) suggest new strategies for curriculum management (habitual, opinion and factual). The study concluded that the managers understood/learned new strategies of managing curriculum through their reflections on their use of visions for the use of Moodle. This article consequently recommends the use of Moodle visions for curriculum management and the incorporation of a reflective process to help managers to interrogate their past and present in order to generate new strategies to improve future management knowledge/skills.

Keywords: curriculum managers; factual; habitual; Moodle; opinion; reflection

Introduction

The post-2015 challenge is no longer about recruiting more learners to schools, but instead, about the achievement of high quality education that improves learners' overall performance (Berkvens, Van den Akker & Brugman, 2014). This post-2015 challenge is an important call from United Nations Educational Scientific and Cultural Organization (UNESCO) to all the affiliated/interested nations, after it was observed that most schools have large numbers of learners, but that providing learners with a high quality education is dependent on effective school leadership and management (Dennis, 2014; Leidner & Jarvenpaa, 1995). Effective school management uses the designed curriculum to drive all school processes (Ngubane-Mokiwa & Khoza, 2016). In other words, effective school management is about managing the curriculum in such a way as to produce a good learning environment, that motivates both learners and teachers (Bush, 2012). A well-managed curriculum is able "to enhance [teacher/learner]'s critical, creative, caring and collaborative thinking and prepare them for democratic citizenship" (Green & Condy, 2016:1). This suggests that educational management is also about managers' competencies of managing curriculum learning environments with the relevant resources that empower teachers, managers, and learners.

Although 'curriculum' can have several definitions, this study defines it as either a plan for teaching/learning (defined from the intended position – managers' level) (Berkvens et al., 2014) or a plan of teaching/learning (defined from practised position – teachers'/learners' experiences) (Pinar, 2012). According to Berkvens et al. (2014), curriculum may be represented by three main layers. The first layer is the intended/planned/prescribed/official/formal curriculum, which is a written policy of ideas that are framed by educational vision with goal/s and intentions of the teaching/learning curriculum (belongs to managers/developers). The second layer is implemented, enacted, or practised curriculum (also known as curriculum in action), which is the interpretation of the intended curriculum as perceived by teachers and the actual process of teaching in operation (belongs to teachers). The third layer is the attained, achieved, or assessed curriculum, which is the learning experiences perceived by learners as measured through their achievement of learning outcomes (belongs to learners). Thus, in defining the curriculum from the first layer, the curriculum becomes the plan for teaching/learning, and in defining it from the second or third layer, it becomes the plan of teaching/learning. This study focuses on the first layer (intended/written curriculum).

Today, the curriculum learning environments include both future content, namely the electronic learning environment, and legacy content, namely face-to-face curriculum content (Khoza & Manik, 2015). This combination of environments motivates learners to be active, independent, and self-driven/motivated to learn even in the absence of their teachers (Green & Condy, 2016; Ngubane-Mokiwa & Khoza, 2016). As a result, curriculum managers (managers) use visions/reasons (personal, social and professional) of Moodle in order to accommodate their learners who seem to demand future content (electronic information), because they are digital natives (Prensky, 2001a), or born into the digital age, where both the future content and legacy content (documented information) dominate learning environments (Czerniewicz & Brown, 2014). The influence of future content makes it easy for the schools to digitise all relevant documents so as to be available online. Learners do not have to buy the prescribed sources of information, because they can even print the

sources/documents online anytime (Khoza, 2011; Ngubane-Mokiwa & Khoza, 2016; Prensky, 2001b). According to a study conducted by Khoza and Manik (2015), the advancement of digital technology has produced specific, relevant resources to be used by schools/universities to develop conducive learning environments that can be utilised by managers to improve the quality of learning that improve learners' performance. Resources are defined as objects and people that communicate learning (Khoza, 2012; Miles & Darling-Hammond, 1998). One of the most popular resources used by educational institutions to manage their curricular is the Modular Object-Oriented Dynamic Learning Environment (Moodle), which is also popular as the Learning Management System (LMS). Moodle was introduced to promote a social constructivist learning environment, where students use their experiences to construct knowledge (Amory, 2012). As a result, Moodle allows managers/teachers to create relevant and, powerful online videos that explain all the concepts that are relevant to all the subjects/modules. It also allows managers/teachers to create chat and discussion forums for socialisation.

Moodle may suggest that there is a need for an intervention that may help managers to create learning environments that promote a strong alignment between personal, social and professional visions for the use of Moodle. We selected Moodle because it was used by the participants (the managers) for this study. In addition, we selected reflection as a tool, as it is a powerful resource that supports managers to transform and understand how they should adapt according to their strengths and weaknesses (Mezirow & Associates, 1990; Milner, 2003). In other words, reflection processes may help managers, teachers, and learners to learn by interrogating their past and present experience in order to make decisions regarding their future. As such, the next section presents the literature/studies on the phenomenon for the study.

Moodle Visions and Reflections

Moodle is a free, open source software (OSS) that can be downloaded online without permission/license from the owners. Moodle, as a LMS resource for learning environments, is divided into three systems: hardware (machines that drive Moodle software such as computers, laptops, smart phones, and other digital machines), software (software that displays information from the hardware), and ideological-ware (education/curriculum approaches/theories or visions) (Khoza, 2014). Ideological-ware resources produce reasons for the usage of Moodle called visions. Visions are cognitive processes that influence the way managers use Moodle in particular ways for teaching

(Khoza & Manik, 2015). Moodle visions are divided into personal development, social, professional and reconstruction visions (Schiro, 2013). This suggests that the third division of Moodle resources (ideological-ware), which consists of the four Moodle visions (personal, social, professional, and reconstruction), should be used to understand the application or integration of hardware and software resources in curriculum management (Sánchez & Hueros, 2010).

Personal vision creates an environment that helps teachers and learners construct their own unique individual identities while managers continually monitor the learning environment (Ngubane-Mokiwa & Khoza, 2016). When managers/teachers create this Moodle-supported environment, they include experiential and subjective activities that support the teachers and learners in order to construct and repeatedly reconstruct knowledge, as observed by Schiro (2013). Moodle environments are designed to trigger the personal processes/actions (visions) stored in the teachers'/learners' subconscious minds/thoughts, from which they draw in the teaching/learning environments (Khoza, 2011). The personal processes/actions address the needs of individual students/managers/teachers and are mostly generated from their unique contexts (Schiro, 2013). Therefore, personal visions become a foundation of social, professional, or reconstruction visions and are determined by individual choice of transformation (Maharajh, Davids & Khoza, 2013).

Social vision places society at the centre of the Moodle learning environment (Ngubane-Mokiwa & Khoza, 2016). This Moodle vision is called the horizontal vision (Bernstein, 1999). In the horizontal vision, Moodle usage is driven by learning outcomes. Achievement of observable/measurable learning outcomes is the major practice in this type of vision (Khoza, 2014). Levels of outcome are not important, and instead, achievement of outcomes becomes an end to itself. As a result, learning is mostly about the achievement of outcomes based on a specific local context (Bernstein, 1999; Deng & Tavares, 2013). According to this vision, knowledge is mostly generated horizontally, from simple, local known sources. Assessment is mostly about what is present, or what the learners (students) have achieved (through the specific local context), not what the students should have achieved as determined by international standards (Schiro, 2013). The opposite for this vision, which places the profession at the centre of learning environment, is professional vision. Professional vision is dominated by the cognitive domain, which follows a vertical or hierarchical approach (Tyler, 2013). The cognitive domain is used to decide whether learners are successful or not within a specific

discipline/profession by mastering specific content. In the professional vision, each subject or discipline stands on its own and has its own collection of terminologies/concepts. It is driven by identified content, where all teachers teach the same body of knowledge from the lowest to the highest levels of the cognitive domain (Vaughan, Nickle, Silovs & Zimmer, 2011).

Another vision that seems to emerge from the Moodle environment is the reconstruction of vision, where teachers/managers use reflections to critique their teaching in order to become consistently self-reflexive, and reconstruct new knowledge that influences the smooth integration of technology into the teaching/learning environment (Khoza & Manik, 2015). The teachers/managers constantly reflect on their practices in such a way that reflection becomes a result of their conscious mind and thought, which may promote critical reflections that answer the questions of what, who, when, where, how and why, within one's teaching practice, discipline, and society (Schiro, 2013).

Critical reflection as "an active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (Dewey, 1933:9), assists managers to manage learning by providing Moodle environments that transform the learning environment for users (Maharajh et al., 2013). Dewey (1933), as the leading proponent of the reflection process, discovered that reflections are an important ingredient of curriculum management. Reflections transform the curriculum users when they reflect on/in/for their actions. Reflect-on involves interrogating the past actions, while reflect-in concerns present actions, and reflect-for takes into account future actions (Khoza, 2014). Later studies (Ngubane-Mokiwa & Khoza, 2016; Pinar, 2012; Valli, 1992; Van Manen, 1977, 1995) discovered that reflections are powerful if they are framed by action research, as the curriculum users are able to transform and become critical thinkers through processes of critical reflection, reflection on action, and reflection in action. In other words, reflections support the process of action research as one of the most powerful principles of action research (plan, act, observe, and reflect) (McNiff, 2013). This suggests that studies of this nature, ought to be framed by action research, which favours the critical paradigm that helps learners to learn through transformation processes of assimilation and/or accommodation (Mezirow & Associates, 1990).

Research Objective and Research Questions

This article intends to explore managers' reflections on the usage of Moodle visions in the management of school curriculum at a school in Durban, South Africa. This article may help

schools, other education institutions and managers to decide on the relevant Moodle vision/s for the teaching/learning environment.

The data production was organised in such a way as to respond to the following research questions:

- What are the managers' reflections on the usage of Moodle visions in the management of school curriculum?
- What are the new strategies of Moodle curriculum management that can be generated from the managers' reflections?

Research Design and Methodology

This study presents a critical action research of three managers (deputy principals) who registered as part-time postgraduate students at a South African university in 2015, while still actively involved in the management of their school curriculum. These managers understood the importance of Moodle usage in curriculum management from the university, where they were registered in 2015. For this study on reflections, critical paradigm together with action research was very important, because the main aim of critical action research is to transform the learning environment according to the needs of those who use the learning environment (Creswell, 2013). Managers were not aware of the importance of reflections in transforming teachers' understanding of their practices. The managers came to better understand their practices during the reflection processes, which helped to transform the managers' knowledge, experiences, and understanding (through action research rounds). Curricular /Subjects that underwent management by the managers were Mathematics, Physics, Life Sciences, Accounting, English, Geography, History, Afrikaans, Economics, IsiZulu, Technology, and Life Orientation. Qualitative critical action research is important for this study because critical action research is transformative, explorative, descriptive, contextual, and holistic in its design, and aims to produce rich descriptions of reflections that transform participants' knowledge and understanding (McAteer, 2013; McNiff & Whitehead, 2009). Action research consists of four powerful stages (planning, implementing, evaluating, and reflecting) used to train/educate participants in order to critically evaluate their actions to improve their situations (McNiff, 2013). Action research in this study consisted of two rounds and the answers to the research questions came from the reflection stage of action research.

Sampling and Data Generation Methods

Purposive, convenience sampling, was used in selecting the three most easily accessible managers from the only Durban, South Africa, high school that managed the school curriculum through Moodle. The participants were identified when they

attended a curriculum workshop hosted by the Department of Basic Education. Reflective activity was emailed to the participants as a means to reflect on the main questions that guided the data generation methods. The guiding questions were: reflect on your personal experience or vision of using Moodle in managing the curriculum; reflect on your social vision of using Moodle in managing the curriculum; reflect on your professional vision of using Moodle in managing the curriculum; reflect on any other vision of using Moodle to manage the curriculum; reflect on Moodle hardware resources used in the management of curriculum; reflect on Moodle software resources used in the management of curriculum; and, reflect on Moodle approaches/theories used in the management of curriculum. The reflective activity was followed by one-on-one semi-structured interviews and focus group semi-structured discussions, which also used the same seven questions in order to triangulate the data. The reflective activity was emailed twice to the participants (Round One & Two). The period between the rounds was one month, and period between the data generation methods was approximately three days. The one-to-one semi-structured interview and focus group semi-structured interview were both administered twice, for approximately thirty minutes per participant, and per group, respectively, after the reflective activities were analysed. The three participants wrote paragraphs to answer each of the questions in both rounds of the action research.

To meet ethical guidelines for the study, permission was obtained from the school and Department of Basic Education, and informed consent obtained from the participants (in terms of confidentiality, anonymity, voluntary participation, and withdrawal), while the ethical clearance certificate was received from the university at which the managers were studying in 2015. The new names given to the study participants, to replace their real names, are Manager 1, 2, and 3.

Data Analysis

The multiple sources (as shown above) of data were used for the purpose of enhancing authenticity/triangulation of data and achieving measures of trustworthiness (Creswell, 2013). For ease of transcription, an audio-tape was used to record the interviews and focus group discussions (Cohen, Manion & Morrison, 2007). Therefore, the five processes of trustworthiness were involved and observed in this study (credibility, confirmability, dependability, triangulation, and transferability) (Ozerbas & Ucar, 2014). These processes were involved through the use of the two action research rounds, data generation methods (reflective activity/journal, semi-structured interviews and focus group discussions), literature and audio-tape.

Qualitative inductive analysis of reflections through Moodle visions and resources was used for data analysis in this study, in order to generate the new curriculum management strategies. Qualitative data that produced categories and themes were folded into one another over time (Patton, 1990). Inductive analysis was important for this study, where the purpose was not only to explore the managers' reflections, but also to empower the participants through rich descriptions of their reflections. Therefore, qualitative inductive analysis is relevant to this study, because it is capable of achieving rich description of explored phenomenon as influenced by the critical paradigm and action research (McAteer, 2013).

Findings

Table 1 presents the findings for this study framed by two curriculum management Moodle themes with categories generated from the data. Each of the findings presented under the themes was answered (in writing) during reflective activity and confirmed/triangulated by means of the interviews and group discussion.

Table 1 Findings - Moodle themes and categories generated from the data

Themes	Categories
Moodle visions that produce new management strategies	<ul style="list-style-type: none"> • Habitual strategy • Opinion strategy • Factual strategy
Moodle resources that produce new curriculum management strategies	<ul style="list-style-type: none"> • Future content • Legacy content

Theme One: Moodle Visions that Produce Curriculum Management Strategies

The findings from the managers' reflections on curriculum management through Moodle visions indicate that there are three new curriculum management strategies that were generated from the data. The strategies are categorised into habitual, opinion, and factual curriculum management (Table 1).

Habitual curriculum management strategy

The participants each had more than ten years of experiences in managing their school curriculum from different subject areas (Mathematics with Sciences, Social Sciences, and Commercial Department), as indicated by the participants' reflections of round one (action research).

Manager 1 remarked, "*I have been managing curriculum as one of the three deputy principals for the past 12 years, especially Mathematics and Sciences curriculum. When we decided to introduce Moodle in our school, we used it like any other technologies we have been using...*"

Manager 2 added, "*...I do not have a specific vision or reason for using Moodle in different way except what I have been doing with other tech-*

nologies... I am still doing what I have been doing since I started to manage the curriculum in the last 15 years in Social Sciences..."

Manager 3 supported the other two participants, indicating "...I do not have the vision for using Moodle like any other technologies that I have been using in the past 11 year commercial subjects. The most important part of my curriculum management is when I meet with teachers to update..."

These accounts indicate that the managers' personal interests were at the centre of their curriculum management processes, because they did not define visions. The participants' use of habits (habitual actions) as their Moodle vision suggest that the participants were driven by subconscious thoughts that reflect habitual actions (Gay & Kirkland, 2003). They were not consciously aware, at all times, of what they were doing to change their actions, which were influenced by the new strategies of management/leadership. The use of habitual actions in the management of curriculum denies managers the opportunity to develop decision-making skills and emotional competencies (Dennis, 2014). Decision-making knowledge/skills and emotional competencies are required in the process of understanding Moodle visions and resources, in order to produce new curriculum management strategies (Ngubane-Mokiwa & Khoza, 2016). In other words, understanding both visions and goals strengthens the internalisation of new knowledge and competencies that improve the curriculum learning environment (Schaap, Baartman & De Bruijn, 2012). However, they started to understand the visions during round two, considering the following statement: "...reflections on the Moodle visions helped me to understand my strengths and weaknesses in the use of Moodle and general life..." (Manager 2). The new knowledge and competencies are demanded by the future content.

Therefore, conscious thoughts help the managers to plan, act, evaluate and reflect under the influence of the action research principles (McNiff, 2013) and find their own identities within the use of Moodle (Khoza & Manik, 2015).

Opinion curriculum management strategy

The managers' reflections of the second round of action research indicate that they started to reflect on Moodle social vision, which produces opinion strategy of curriculum management (Bernstein, 1999). When managers are influenced by social vision, they invest in people's oral opinions (Khoza, 2014). The following findings from the participants indicate that they believed in other people's opinions:

Manager 1 wrote and said "we decided to use Moodle, because we were told by our university

lecturers about the importance of Moodle in managing curriculum. This decision was facilitated by our Facebook friends... Without bringing in technology, curriculum cannot be effective..."

Manager 2 wrote/added that "...even if we attend department workshops everyone is talking about the influence of technology in school curriculum, which made us to realise [sic] that it is important to introduce Moodle in order to allow teachers and learners communicate using technology. After introducing Moodle all the neighbouring schools started to respect and encourage..."

Manager 3 wrote/added that "...it is good to use Moodle because whenever we meet other teachers, they give us full-attention through their praises that encourage us to continue to enjoy Moodle... Even if we meet supervisors from the Department of Education we get words of encouragement and invitations to help other school as the leaders of Moodle in our district..."

These accounts indicate that socialisation was at the centre of the curriculum, because other people's opinions drove their management of curriculum through Moodle (Schlossberg, 1984). The participants' transition from the personal (habits) vision to the next visions seems to be influenced by other people's opinions (Hobden & Hobden, 2015), which strongly suggests that the social visions produce opinion strategy of curriculum management or entertainment (Singhal & Rogers, 1999). It was difficult for the participants to introduce Moodle with formal activities within the curriculum learning environment, because they started with social network, which resulted in more entertainment activities than formal education activities. According to Singhal and Rogers (1999), a well-managed curriculum learning environment has a balance of both formal education and entertainment education, such that the learning environment is influenced by entertainment-education theory (EET). Moodle was designed to promote EET, among other theories, in order to motivate both teachers and learners in the same way as that of social networks (Khoza, 2012). The Moodle curriculum learning environment is safer than social networks, because all participants are fully registered members of the institution, who can never be anonymously involved in any type of cyberbullying (Khoza & Manik, 2015). Different types of cyberbullying have affected many social network users suffering slander through network abuse by other members (Smit, 2015). The findings, therefore, suggests that it is important for the curriculum managers to understand Moodle curriculum visions, especially the professional vision that encourages the application of formal education within Moodle.

Factual curriculum management strategy

The findings from round two of the action research indicate that the participants' reflections included some elements of the Moodle professional vision, which produces factual management over and above the other previously discussed visions.

Manager 1 wrote/indicated that "...yes, we do read studies and books on [the] curriculum, but studies on Moodle are limited. That is why it is not easy for us to differential between the Moodle visions or reasons... We do not have a formal qualification on Moodle..."

Manager 2 noted that "...we do not have many books and formal qualifications on Moodle... Our school technicians sometimes help us with books on how to develop websites in order for us to learn the Moodle language..."

Manager 3 added that "...we tried to develop our curriculum learning space by means of weblog from Google but it did not work and the web design language was difficult for us. That is why we decided to bring in Moodle..."

These findings indicate that professional vision, which produces facts or factual curriculum management strategy in such a way that it leads to formal qualification, was limited. Although participants read studies and books on curriculum and Moodle, they did not plan to gain a formal qualification in the Moodle curriculum language. The findings further indicate that the participants are willing to read up on both curriculum and technology. The formal curriculum qualification that combines these two fields in the management of curriculum by integrating technology is Educational Technology (Van den Akker, 2003). The professional vision of the use of Moodle concerns the application of cognitive domain, which is always driven by conscious thoughts/mind (Lisle, 2010). As a result, any action implemented according to this vision should be planned, prepared, executed, evaluated, and refined in order to improve the learning environment by following processes that are similar to that of action research (McNiff, 2013). According to Mezirow and Associates (1990), curriculum learning environments should always have parts that are created to challenge (disoriented dilemma) users to think more deeply in order to transform. Among all these cognitive processes, reflections are becoming a common factor that seem to summarise the entire transformative process.

Therefore, it is faster for the Moodle professional vision users than social users to achieve their goals, because they apply the principles (facts) of their profession to judge their activities more than those opinions that may delay the achievement of their goals (Tyler, 2013). Reeves, Herrington and Oliver (2004) are of the view that these professional facts should always come from authentic activities (from their real life) of their

profession. As a result, the use of the professional vision produces the factual strategy of Moodle curriculum management, through professional facts (written and officially published information used by the participants).

Theme 2: Moodle Resources that Produce Curriculum Management Strategies

The findings indicate that Moodle resources were influenced by future content and legacy content (Khoza & Manik, 2015; Prensky, 2001a).

Future content

The managers' reflections indicate that hardware and software resources used by the managers were driven by social vision that generated opinions rather than facts, from other people.

Manager 1 wrote/noted that "...we have been getting a lot of respect and attention from other people in our school and outside the school, especially when we bought new laptop, BlackBerry and tablets to run Moodle and replace desktop computers... the software tools which we use for curriculum management are discussion forum, online quiz, grading, chat room and linked [online videos]."

Manager 2 indicated that "...most of us bought new laptops and smart phones for Moodle software which is good for us in moving with times in order for other schools to learn from us..."

Manager 3 wrote/said "...when we use online tests of quizzes in the curriculum and teachers enjoy these because they do not have to mark as the system does the marking automatically after the test is over. We sit in our offices and manage teachers by means of Moodle..."

These findings indicate that the participants used Moodle resources to gain power from others as if learning environment is about technology (hardware and software resources) instead of approaches/theories (Amory, 2010). This suggests that other people's opinions were important in managing the curriculum, and that as a result, they focused on hardware and software resources. Opinions promote entertainment education (Singhal & Rogers, 1999) or social education (Amory, 2012; Khoza, 2012), whereby people use informal learning to learn through a process of socialisation that transforms both the individual curriculum environment user and the whole group of users (Amory, 2012). An effective way of managing this type of curriculum environment is to use electronic copies of information (future content) (Prensky, 2001b), because the users have been identified with new names that encourage them to use digitalised information such as 'Screenagers' (Rushkof, 2006) or 'Clickerati' (Harel-Caperton, 2003) and others. These names indicate that Moodle curriculum environment promotes future content when the Moodle environment is dominated by hardware and

software resources (Piguillem, Alier, Casany, Mayol, Galanis, García-Peñalvo & Conde, 2012). The names mean that users enjoy the on-screen information they get by just clicking their mouse. Bourdieu and Wacquant (1992) use the notion of field referring to Moodle as an online social platform that circulates social/economic capital (hardware and software resources), as well as cultural capital (ideological-ware resources). Moodle social platform transform users through the use of different hardware and software resources to understand and enjoy each other's interests (which usually takes place after prolonged interaction) (Czerniewicz & Brown, 2014). However, cultural capital or ideological-ware resources promote legacy content.

Legacy content

Other findings indicate that the managers became aware of curriculum approaches or theories known as cultural capital (Czerniewicz & Brown, 2014) or ideological-ware resources (Khoza, 2012) in the second round of action research (they were limited in applying the knowledge).

Manager 1 wrote/indicated that "...constructivism is one of the theories that we use in managing the curriculum...we were only told about other theories like activity theory that influence online curriculum..." (the other two managers agreed).

This indicates that they did not read studies on Moodle curriculum environment theories. As a result, they only knew of constructivist learning theory, because they were aware that Moodle was designed according to it, for example, where Manager 2 expressed: "...I know constructivist theory from Moodle guide but it is difficult to read on screen for a long time..." This suggests that they did incorporate a limited element of the 'legacy content' (information on hard copies that present the foundational theories/approaches of education). This suggests that it was not easy for them to understand the Moodle curriculum management environment theories, because they did not understand the culture of reading required to promote their understanding of cultural capital (Czerniewicz & Brown, 2014).

Conclusion

This study has presented the importance of managers' understanding of curriculum visions that support the identification of Moodle curriculum strategies. Previous studies on Moodle have presented the importance of Moodle hardware and software (Deng & Tavares, 2013; Rushkof, 2006; Sánchez & Hueros, 2010) and missed the importance of Moodle visions. This suggest that there is a need for further studies on Moodle visions in order to produce new strategies that integrate Moodle hardware and software more effectively

into education. This study has paved the way for other studies on Moodle hardware and software usage for future content. Moodle ideological-ware resource usage for legacy content also produced a factual strategy of curriculum management. Therefore, the findings indicate that the managers had limited knowledge of theories, which may suggest a need for a follow-up study on the implications of managers' knowledge of theories.

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Notes

- i. Moodle stands for Modular Object-Oriented Dynamic Learning Environment
- ii. Moodle is a free, open source software (OSS) accessible at <https://moodle.org>
- iii. Published under a Creative Commons attribution licence.

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