Algerian University Teachers' Disposition and Experiences in Using MOOCs for their Continuous Professional Development

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Abstract

The professional development (PD) programmes initiated by the Algerian ministry of higher education for newly recruited teachers: "ICT and Pedagogical Practices" and "Pedagogical Accompaniment" cannot prepare the novice teachers for all the challenges they may face along their career. Accordingly, teachers need to look out for additional training opportunities. One of these opportunities is found in Massive Open Online Courses (MOOCs). Nevertheless, research on applying MOOCs for continuous professional development (CPD) with regard to Algeria is overlooked. Hence, this study aims at filling in this gap by exploring Algerian university teachers' familiarity, disposition, and experiences of using MOOCs for CPD. To reach this end, an online questionnaire is administered and a semi-structured interview is conducted with university teachers. The results of the study evinced that: 1) Teachers have low familiarity and weak interaction with MOOCs in general and, 2) teachers acknowledge the importance of CPD and are aware that the initial training and the teaching experience are not sufficient to maintain career advancement. Yet, 3) they do not have the disposition to engage in a CPD, 4) teachers consider this study as an eye opener on MOOCs and show a positive attitude for leveraging MOOCs for their CPD in the future. In the light of these findings, urgent plans to implement and value the culture of informal CPD are recommended, in addition to creating centres at the level of the universities devoted exclusively to CPD and related research. Most importantly, MOOCs that address the Algerian teachers' CPD needs should be developed.

Keywords: Andragogy, constructivism, life-long learning, Massive Open Online Courses, teacher continuous professional development

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Introduction

Teachers are central actors and “reflective change-agents” (Calderhead & Shorrock, 2005, p. 2) at the teaching learning process. Powell & Bodur (2018) maintained that it is widely acknowledged by researchers practitioners and policymakers that any educational reform that aims at improving the quality of education, hence learners’ performance, should take TPD into consideration. A logical stance since learners are, to a far extent, a product of an educational system wherein the teacher is prepared to reflect the quality of education (Connelly, Clandinin, & He, 1997). In highlighting the importance of TPD and its direct positive impact on the learners’ outcomes, Donaldson (2011) argued that improvements in learners’ performance:

... will be better achieved through determined efforts to build the capacity of teachers themselves to take responsibility for their own professional development, building their pedagogical expertise, engaging with the need for change, undertaking well-thought through development and always evaluating impact in relation to improvement in the quality of [students’] learning. (p. 84)

TPD is of utmost importance and permanent requirement for teachers, novice and expert alike. Novice teachers need scaffolding regarding classroom management, content knowledge, and teaching skills. Expert teachers need to review their teaching practices and upgrade their knowledge and cope with the ever-changing technological developments (Gajdos, 2016). Evidently, the world is changing dramatically and this change has its subsequent effects on higher education (Khan et al., 2017). The driving forces for this change are summarized in two main points. The first is the orientation of education to meet the needs of economic workforce which has an increasing demand on competent individuals armed with new skills (e.g.: Creativity, originality and initiative, analytical thinking, complex problem solving...etc). The second driving force is the radical transformation brought by digitalization, as it were, of lifestyle which is altering education and brought with it the rapid and free access to information. This inflation in information is best described by Fuller, when he created the “*Knowledge Doubling Curve*”, drawing attention to the dramatic fact that:

Until 1900 human knowledge doubled approximately every century. By the end of World War II knowledge was doubling every 25 years. Today things are not as simple as different types of knowledge have different rates of growth. For example, nanotechnology knowledge is doubling every two years and clinical knowledge every 18 months. But on average human knowledge is doubling every 13 months. According to IBM, the build out of the “Internet of Things” will lead to the doubling of knowledge every 12 hours (Contact North, p. 11).

Given such ground breaking changes occurring in the landscape of higher education, teachers cannot cope with the accelerating rate of information growing by relying only on the training they received when they were novice namely, “ICT and Pedagogical Practices” and “Pedagogical Accompaniment for Newly Recruited Teachers”. In echoing this stance, the Organisation for Economic Co-operation and Development (OECD) (2009) reported:

No matter how good pre-service training for teachers is, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers. Education systems therefore seek to provide teachers with opportunities for in-service professional development in order to maintain a high standard of teaching and to retain a high-quality teacher workforce. (p. 49)

Rightfully, the study argues for systemizing TPD and making it a *continuous* process throughout the teacher's professional life.

Another argument spawning discussion in the sphere of TPD is the fact that the PD programmes designed by the ministry is the kind of "one size fits all" initiatives wherein "hundreds of teachers are pulled together to listen to an expert pontificate on a given subject" (Sweeney, 2003, p. 3). In the sense that teachers are mandatorily required to enroll in PD programmes they either encompass units irrelevant to their needs or are not aligned with their needs. This fact generates negative attitudes and dissatisfaction towards the formal PD programmes. More often than not, teachers have their distinguished individual needs regarding the aspects of their profession. Correspondingly, the study argues for *individualizing* CTPD, and making it individual-centred rather than group centred. In doing so, the teacher is incumbent to identify his needs and has control over the different phases of his development.

Nevertheless, designing, implementing, and evaluating TPD initiatives are challenging tasks, let alone an individualized continuous PD because of the multi-facet factors that should be taken into consideration. Odden, Archibald, Fermanich & Gallagher (2002) listed six cost elements that are central to any TPD programme: "1) Teacher time, 2) training and coaching, 3) administration, 4) materials, equipment, and facilities, 5) travel and transportation, and 6) university tuition and conference fees" (Cited in Misra, 2018, p. 68). These elements could be the main reason of the dearth of formal PD programmes. As such, teachers cannot rely only on the PD programmes initiated by the ministry and they need to pursue out effective PD opportunities that are convenient to their practices.

One of these available and recognized opportunities is MOOCs. MOOCs are the alternative viable strategic option available to teachers to educate themselves and maintain long term sustainable career development. Therefore, this study calls for the necessity of leveraging MOOCs as a vocational educational and training resource to upskill teachers and raise the quality of higher education.

Noticeably, research on MOOCs and its impact on learning in the developing countries is lacking (Spector, 2017). Following the same line of argument, Patru & Balaji (2016) wrote: "With very few exceptions, many of the reports on MOOCs already published do not refer to the interests and experiences of developing countries, although we are witnessing important initiatives in more and more countries around the world" (p. 11). This is to be coupled with "the dearth of empirical research into online teacher professional development and by the lack of teacher voice in its design" (Ketelhut, McCloskey, Dede, Breit, & Whitehouse, 2006, as cited in Powell & Bodur, 2018, p. 20). This holds true when the state of affairs under investigation is not well-documented and about which no ample research has been accomplished.

The present enquiry, therefore, derives its significance from filling in this gap and contributing to this area of research by offering some important insights on the Algerian teacher's practices regarding MOOCs and CPD namely: 1) Exploring university teachers' familiarity and experiences with MOOCs in general. 2) Soliciting general information about teachers' attitudes towards PD. 3) Unveiling teachers' disposition and experiences of using MOOCs for their CPD.

Literature Review

Teacher Professional Development Defined

TPD is a growing area of research that attracts attention (Calderhead & Shorrock, 2005). Its definition is one of the issues that do not win the theorists' and practitioners' consensus (Tan, Chang, & Teng, 2015). Schlager & Fusco (2003), for example, defined TPD as:

A career-long, context-specific, continuous endeavor that is guided by standards, grounded in the teacher's own work, focused on student learning, and tailored to the teacher's stage of career development. It is a collaborative effort, in which teachers receive support from peer networks, local administration, teacher educators, and outside experts. (p. 5)

Taking from this perspective, TPD is conceived as a long-term process of ongoing learning for in-service teachers. It aims at enhancing the teacher's understanding of his professional competences in: Pedagogical knowledge, classroom management, coordinating with the teaching team, skills and attitudes (Gajdos, 2016). Richards & Farrell (2005) stressed the critical aspect of TPD which is the fact that "this process can be supported both at the institutional level and through teachers' own individual efforts" (p. 3). In the meantime, Craft (2000) emphasized that this teacher learning that is labeled CPD should be undertaken after the induction phase (estimated two years) beyond the point of initial training.

Online Teacher Professional Development (OTPD) is one of the forms of TPD. Powell & Bodur (2018) defined OTPD as: "Courses, workshops, or learning modules that are delivered in an online format for teacher PD" (p. 21). These activities address changing a set of skills, behaviours and thoughts, to consolidate the teachers' knowledge and enrich their experience. In these TPD forms, there is a plethora of Open Educational Resources (OER) use including wikis, videos, podcasts, and discussion forums. MOOCs designed for PD is a well-run example of OTPD which is the main concern of the research at hands.

The National Research Council (NRC) (2007) summarized the importance of the OTPD in five major points. First, OTPD alters the instructional practices of the teacher which affects students' learning outcomes. Second, OTPD programmes are so versatile and scalable designed for an unlimited number of teachers which they can take as long as the programme is pertinent to their needs and have access to. Third, OTPD can, also, provide the teacher with the opportunity to construct a community of professionals across disciplines worldwide. They can asynchronously or synchronously interact and reflect on their views and practices regarding classroom practices and exchange on their experiences. Forth, OTPD is highly reflective and involving because teachers, with the opportunity of assuming the responsibility of their development, are cognitively and socially present and involved throughout the programme stages.

MOOCs

MOOC is another innovation to be added to the evolutionary history of distance education. MOOCs is an acronym that stands for Massive Open Online Courses. MOOCs are learning experiences designed by academics for a scalable indefinite number of participants. They do not require prior participatory conditions or qualifications. The components of the courses including study material, quizzes, and exams are offered 100 percent online and can be accessed by anyone anywhere anytime with the availability of internet bandwidth (Kaplan & Haenlein, 2016). These characteristic components (massiveness, openness, online) contribute to the very uniqueness of MOOCs.

According to Spector (2017), "the term MOOC was coined in 2008 by David Cormier from the University of Prince Edward Island in Canada to label twelve-week online course Connectivism and Connective Knowledge" (p. 3). This idea is considered as an event inaugurating a very rapidly growing field (Patru & Balaji, 2016). Despite its relative short lifespan, MOOCs has expanded dramatically and spawned debate and confusion amongst the academic community. Following this lead, thousands of MOOCs are delivered by MOOC providers and in most of the cases, higher education institutions outsource MOOC platforms like Coursera, Udacity, Udemy, EdX, Lynda, and Iversity ...etc.

The first wave of MOOCs aimed at grouping people around a shared area of interest in a virtual setting. This type of MOOCs that aims at creating subject matter networks of people are called cMOOCs or the connectivist MOOCs (Spector, 2017; Baturay, 2015). Later on, another type of MOOCs emerged. It is the MOOC that is designed in the form of tutorial wherein an expert in the subject matter is lecturing. This type is called xMOOCs or content-based MOOCs (Spector, 2017; Baturay, 2015). The distinction between the two is in that "cMOOCs focus on knowledge creation and generation whereas xMOOCs focus on knowledge duplication" (Siemens, 2013, as cited in Ulrich & Nedelcu, 2015, p. 1542). Such classification is becoming much less recognized as each type starts incorporating the element of the second. xMOOCs are incorporating the connectivist elements in their design. Likewise, cMOOCs are moving towards directing their participants to extra resources (Spector, 2017).

Though MOOCs are still in the developing stage and open for experience (Khan et al., 2017), they are regarded as a quantum leap that affects almost all aspects of education due to its rapid growth. MOOCs inaugurated the globalization and democratization of education by making quality education worldwide open to whoever wants to learn from different generations (Spector, 2017). In a context wherein constraints of time and place are vanished, MOOCs provide self-directed and self-paced learning experiences rich with learning resources and discussion forums for collaborative communities. (Alario et al, 2014; Wu & Chen, 2016, as cited in Khan, et al., 2017).

Theoretical Framework

Contrary to the field of research on students' learning, the theoretical framework that can be used to look at TPD is not well established. There is a dearth of theories on teacher education that causes lacking a solid background for the PD programmes (Kennedy, 2016). Nevertheless, the study tries to approach the topic under investigation by combining adult learning and constructivism as a

theoretical framework. TPD is perceived as “teachers’ learning” (Postholm, 2012, p. 405). This learning process is deeply rooted in adult learning theory that implies long life learning (Andragogy) wherein the teacher constructs meaning by himself (Constructivism).

Adult learning theory, known also as andragogy, advocated originally by Alexander Kapp in 1833 (Kapur, 2015) and popularized in the mid 1960’s when it was extensively used by the American educator Malcolm Knowles. Hence, the theory was associated with his name. Andragogy is created to describe continuous education. Contrasted to the Greek meaning of pedagogy, child learning wherein the lead of the learning process is in the hands of the teacher, andragogy is defined as the art and science that studies the educational process of adults (Kapur, 2015). From the andragogical perspective, the adult learners are intrinsically motivated by the need to know. They are autonomous and have full self-control to direct their own learning to meet their individual needs. They engage in active learning processes that are based on their life experiences as learning resources and, in the meantime, the learning outcome is relevant and applicable to their life (Knowles, 1990).

Constructivism, on the other hand, is the process of constructing or building meaning through interaction with societal elements. The concept of meaning is central to the theory of constructivism. The latter is defined by Mezirow (2000) as: “The process of using a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience as a guide to future action” (p. 5). The combination of the general principles of andragogy and constructivism can well explain CTPD. Adopting this theoretical framework for PD provides clear lens to approach the problem under investigation. It argues that CTPD is an ongoing process of learning wherein the teacher is engaged in an active enquiry, structured process, self-directed, and most importantly he is intrinsically motivated “to be a life-long learner in a conscious way it means to manage one’s own Continuous Professional Development” (Gajdos, 2016, p. 18).

Methodology

To bring things into perspective, this study calls for an individualized CTPD. In the meantime, it advocates MOOCs as a means to reach this end. This orientation is not new (Misra, 2018). Yet, it is not comprehensively investigated (Powell & Bodur, 2018). Accordingly, this study reasoned that exploring Algerian university teachers’ disposition and their experiences, if there are any, of using MOOCs for their CPD constitutes a valuable addition to the literature of these intersectional topics. This small scale pilot study is weighed on by this task via probing teachers to measure their familiarity with MOOCs in general and their inclination towards CPD. Then, it moves to capture their reaction and readiness when MOOCs are used to enhance their CPD.

Due to the nature of the study, the choice of the descriptive exploratory methodology is the most fitting to answer the following questions:

- Are Algerian university teachers familiar with the idea of using MOOCs for their continuous professional development?
- To what extent their experiences, if there are any, are beneficial?

Data Collection Instruments

To enquire in the topic, the data collection methods implemented are: An online structured questionnaire and a semi-structured interview. The content of the questionnaire and the interview is driven from the related review of literature about MOOCs and TPD. Whilst the questionnaire is created and administered via Google forms services to reach a wide number of university teachers from different Algerian universities, interviews are conducted with 30 teachers from three universities: Oum El-Boughi, M'sila, and Constantine1. The interview is used as an additional data collection instrument because it is strongly believed that the information gleaned from the interview can adequately and optimally supplement the analysis and discussion of the data generated by the questionnaire survey.

Participants

180 teachers from different Algerian universities respond to the questionnaire. The respondents are 65% females and 35% males. As for their academic qualifications, 67.6% are Magister degree holders, while 32.4% are doctorates. Teaching experience of the respondents ranges from six to more than 20 years, 30% are experienced teachers for 10 years and the rest from 10 to 20 years and more.

Data Analysis and Discussion

Data generated by the questionnaire and the interview were ample. As such, the analysis and discussion are limited to the essential and major data and are organized in accordance to the study objectives: 1) teachers' familiarity and experiences with MOOCs, 2) teachers' attitudes towards PD. 3) teachers' disposition and experiences of using MOOCs for their CPD. In the meantime, the data gleaned from the interview are embedded within the analysis and discussion of the questionnaire.

Teachers Familiarity and Experiences with MOOCs

Data obtained from the second part of the questionnaire, which intends to track teachers' familiarity about MOOCs are displayed in Figure 1:

Figure 1. University teachers' level of familiarity with MOOCs

Displayed data reveal that almost half of the respondents (48,6%) do not know what MOOCs are and a quarter (24,3%) have limited familiarity with MOOCs. If the two portions are combined, the result can be explained in that 72,9% of the sample have low, if not to say, no familiarity with MOOCs. This fact is reflected in the interviewees' answers. Most of them did not know what MOOCs stand for and they asked for clarifications to be able to answer the questions.

Moreover, 26% of the sample revealed their moderate familiarity with MOOCs. This “moderate familiarity” is relative in meaning because it also reflects that the respondents may have known about them but have no clear vision about what they can be or what they can serve them for. This was apparent in the interview data from which it is found that some respondents showed confusion between MOOCs, e-learning. One interviewee voiced: *“Sounds interesting, Yet, I don’t seem to really understand what MOOCs is! Does it have to do with e-learning?!”*

In the subsequent question, participants who indicated that they participate in MOOCs (N=23) are asked about the amount of time they spend on MOOCs platforms. Details of the participants’ responses are demonstrated in Figure 2:

Figure 2. Time of interaction with MOOCs per week

The results demonstrate that 66.7% interact with MOOCs for less than one hour per week. 16.7% of the respondents are interacting with MOOCs for one and two hours per week. And, no one interacts with MOOCs for two hours or more. As can be read from the data, the interaction with MOOCs in the range of less than one hour to two hours per week is relatively limited; a fact that reflects teachers’ weak experience with MOOCs. Interestingly, one interviewee explained that she cannot give exact time estimation for her participation because she is not interacting with MOOCs on a regular basis. She justified: *“I participate in MOOCs on a random basis. It occurs that I spend many hours learning on Coursera or CanvaNet per day. And it happens where I do not log-in for these platforms for days.”*

The Professional Development of Teachers

With the exception of the training programmes participants received in the induction phase, they are asked if they have ever participated in any other formal PD programmes. In answering this question, it is found that 89,9% never participated in any other programmes. To gain deeper insights into the answers generated by this question, three statements are designed on a Likert scale to measure the strength of their responses.

Table 1. *University teachers' attitudes and awareness about PD*

	Strongly Disagree	Disagree	Agree	Strongly Agree
• The formal professional development I received in my first year of teaching is sufficient to prepare me for the challenges I may face throughout my career.	8%	56%	31%	6%
• Teachers develop in their career through their actual classroom practices, and professional development programmes have no or little impact.	57%	36%	5%	2%
• I do not participate in professional programmes unless if they are compulsory.	12%	32%	37%	19%

N=180

The given responses reveal that 56% of the respondents acknowledged the fact that though in-service training they had in the initial phase of their career is important, yet it is not sufficient to make them competent and ready to face all the arising challenges throughout their academic life. This finding correlates with the major assumption made by the OECD (2009).

With regard to the responses to the second item, nearly all participants (57% strongly disagree, and 36% disagree) think that classroom practices and their experiences are not sufficient to help them advance in their profession and they are in need of PD programmes indicating their awareness of the importance of PD for professional success. Yet, this finding contradicts with the third item where 37% of the respondents showed a lack of interest in enrolling in future PD programmes. This finding reveals a weak teachers' disposition for taking action to assume responsibility for their own development.

MOOCs for Professional Development

When asking participants about their purposes behind the use of MOOCs, only 26,2% (N= 6) indicated the use of MOOCs for their PD. Some of the titles of the MOOCs designed for PD they participated in are; *TESOL best practices pro, assessment, Online course creation and administration*.

Figure 3. The impact of MOOCs experience on TPD

Coming to the impact of those training MOOCs on their teaching practices, data yielded are summarized in Figure 3 reveal that almost the majority of teachers who participate in MOOCs for

PD believed that there is a moderate impact of this experience on their development as teachers. Moreover, only 14.3% confirmed that their experience is of a large impact. A similar number of teachers indicate the small impact of MOOCs experience on their teaching practices.

These findings are confirmed by the interviewees' answers when they were asked about the impact of MOOCs on their classroom practices. For some teachers, MOOCs experience *"was an eye opening course on many teaching activities that helped me to set clear vision of my teaching goals"*. Other interviewee stated *"I can safely say that now my teaching is more inclusive in that I take into consideration all the differences along the students, and I work on them"*. On the understanding of learner centeredness, a respondent reported: *"I learnt to focus on the learner in the first place. The concept of learner centeredness was just theoretical for me, but now I can apply it with good command"*.

The last questionnaire item is meant to examine the respondents' level of disposition towards the use of MOOCs for their CPD.

Figure 4. Teachers' disposition towards using MOOCs for their CPD

A strong interest in enrolling in MOOCs designed for PD in the future is marked among 51% of the participants, meanwhile 27% showed moderate interest. This finding may seem contradictory to previous finding displayed in Table 1 in which 56% of the participants indicated no interest in engaging in any CPD practice. This can be explained by the questionnaire positive effect on raising respondents' awareness about the use of MOOCs to approach PD. This awareness raising was noticed in the interviewees' responses. Respondents revealed: *"It's the first time I hear about it, but it sounds like a very interesting practice that I would like to learn about"*, *"it seems to me now that MOOCs is one of the highly important avenues if they really help teachers to get acquainted with new technologies, new ways to develop the university task"*. Other responses recognizing the importance of MOOCs are: *"Since those programmes are aimed at brushing up teachers' performances, they would be certainly helpful and fruitful for everyone who seeks creativity and variety. We hope that they would provide what teachers need"*.

Findings

The study finds that few Algerian university teachers are familiar with MOOCs and even fewer are interacting with MOOCs. This interaction is limited in the range of less than one hour to two hours per week; a range that reflects, by no means, poor interactive experiences.

Admittedly, a relative number of Algerian university teachers acknowledge the importance of PD. In the same vein, they are undoubtedly aware that they cannot maintain career advancement by relying only on the PD training they received in the induction phase coupled with their teaching experience. Positive as this stance may sound. Yet, it does not reflect their actions. The teachers are not showing disposition to participate in any other CPD programmes unless if they are formal and mandatory. This stance unveils a contradiction or a gap between teachers' perception and awareness of the importance CPD from one hand and their disposition towards taking action to develop their profession from the other hand.

Another equally important conclusion reached stresses the fact that very few number of teachers (N=6) are leveraging MOOCs for CPD. They are satisfied with their experiences as MOOCs have positively impacted their teaching practices. This impact spans over the concretizing of teaching goals, addressing learners' differences, and understanding the theory and the practice of learner centeredness.

After introducing the teachers to MOOCs and their usability for CPD, many showed an interest to engage in such experiences in the near future. They claimed that their understanding to CPD was restricted to a conference room setting, travel, and transportation. It is, then, safe to say that this study acts as raising awareness tool about the usability of MOOCs for CTPD.

Recommendations

In the light of the findings, some tentative deductions are made to hopefully contribute, establish and maintain CPD of teachers. It is ought to be recalled that this pilot study is set to explore teachers' disposition and experiences of using MOOCs for their CPD on a small scale. It evinced that few Algerian university teachers are familiar with the concept of MOOCs and their experiences are limited. Unfortunately, if this fact points to anything, it points to the reality that the Algerian teachers' literacy in educational technology and the latest technological advancement related to the teaching learning process is still very low, though MOOCs came to existence a decade ago. As such, this study recommends taking a number of initiatives for the sake of establishing the CPD of teachers starting from raising awareness to cultivating actions, ultimately, students learning.

First, the study recommends valuing the informal PD of teachers. It calls for creating urgent plans to instill the culture of CPD and raise teachers' awareness to the importance of such programmes for their sustainable professional development. This informal PD needs to be self-directed and continuous throughout their lifelong career which helps them to cope with the rapidly changing landscape of higher education. One possible proposal for such informal continuous PD is MOOCs. Teacher can select MOOCs that respond to their individual profiles, needs, and interests. They can select MOOCs that address the real lack of certain skills and competences.

Along the same line, the study draws attention to the fact that while the initial training of novice teachers is centralized at the ministry level, there is a proposal to create CPD programmes. These PD programmes should be centralized at the university level. At this level, centers of PD of teachers can be created. In addition to establishing a culture of research devoted to the PD of teachers, the PD initiatives of these localized centers need to address both the professional and the research aspects in the teacher's identity, the latter is an often forgotten aspect in the literature of the PD of teachers. These PD programmes should, also, be designed around the local university culture.

The findings suggest that, the ministry should take steps towards creating MOOCs leveraging Moodle platform. These MOOCs should address the Algerian teachers' needs respecting the Algerian cultural and academic context.

Conclusion

This study evinced that Algerian university teachers' literacy in educational technology and how it can be leveraged for their CPD is still very low. As mandatory PD programmes faced resistance on the part of teachers, Algerian ministry of higher education needs to value the informal CPD of teachers. In doing so, they would be indirectly implementing a new thinking and cultivating a culture of "self-education" that will prepare teachers to critically review their classroom practices and invoke innovation that maintain progress.

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