UNDERSTANDING TEACHER ENTREPRENEURS: NEEDS ASSESSMENT INSTRUMENT DESIGN FOR MOOCS

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Abstract: Supporting teacher entrepreneurship through accessible pathways like Massive Open Online Courses (MOOCs) offers potential for professional diversification, yet necessitates careful design grounded in participants' actual needs and contexts. This paper addresses the crucial initial stage of developing a MOOC titled "Starting a Side Business for Teachers" by focusing on understanding its target audience, specifically teachers interested in entrepreneurship. We detail the design process for preliminary needs assessment instruments, namely a survey questionnaire and a semi-structured interview guide. These instruments are crafted to identify teachers' motivations, perceived barriers, specific entrepreneurial skill gaps, resource requirements, and learning preferences relevant to initiating side businesses, thereby informing effective MOOC curriculum and content development. Instrument design integrated principles of entrepreneurship education, needs assessment methodologies, and MOOC design considerations. This paper contributes a systematic approach to developing foundational assessment tools vital for specialized MOOC relevance. The survey and interview instruments presented are initial designs currently awaiting validation, the necessary next step before conducting the needs assessment study.

Keywords: instrument design; needs assessment; teacher entrepreneurship; side business; MOOCs; teacher professional development.

INTRODUCTION

The contemporary educational landscape is characterized by dynamic shifts, prompting a re-evaluation of the traditional roles and career trajectories of teachers. Increasingly, educators are exploring avenues for professional diversification, seeking supplementary income streams, and pursuing personal fulfillment beyond the conventional classroom setting (Lako, Myftiu, & Mustafaj, 2023). This burgeoning interest has given rise to the concept of teacher entrepreneurship, which represents a significant pathway for educators to leverage their inherent skills in communication, organization, and knowledge dissemination for new ventures (Pan, Lu, & Liu, 2024). Such entrepreneurial endeavors offer not only potential financial benefits but also opportunities to enrich teachers' professional experiences, fostering innovation and bringing fresh perspectives back into their educational practices (Ruskovaara & Pihkala, 2013). The imperative to support this entrepreneurial spirit among teachers necessitates the development of accessible, high-quality professional development opportunities tailored to their unique needs and contexts (Karunanayaka & Naidu, 2018).

Massive Open Online Courses (MOOCs) have emerged as a powerful and scalable platform for delivering such specialized professional development, particularly in areas like entrepreneurship for educators. The evolution of MOOCs has demonstrated their capacity to democratize access to learning, reaching vast and diverse audiences globally (Renta-Davids, Economides, & Jimoyiannis, 2019; Lopera-Mesa, Echeverri-Molina, & Zuluaga-Mazo, 2023). In the context of Teacher Professional Development (TPD), MOOCs offer flexible learning environments that can accommodate the demanding schedules of practicing teachers who wish to acquire new competencies, such as those required for initiating and managing a side business (Renta-Davids, Economides, & Jimoyiannis, 2019; Robin & McNeil, 2015). The proposed MOOC, "Starting a Side Business for Teachers," is therefore a timely and relevant initiative, positioned to address a growing need within the teaching community by providing structured guidance and support for their entrepreneurial aspirations (Lako, Myftiu, & Mustafaj, 2023). This approach aligns with the understanding that fostering entrepreneurial skills can contribute to teachers' overall professional and personal empowerment, potentially enhancing job satisfaction and well-being through newfound autonomy and achievement (Lako, Myftiu, & Mustafaj, 2023).

However, the efficacy of any MOOC, especially one designed for a specific professional demographic, hinges critically on a thorough understanding of its target audience. The initial stage of conducting a comprehensive needs assessment is therefore not merely a preliminary step but a foundational pillar for successful MOOC design and implementation (Grant, 2002; Stefaniak, n.d.). By systematically investigating the actual needs, motivations, perceived barriers, pre-existing knowledge, and learning preferences of teacher entrepreneurs, instructional designers can create a learning experience that is truly effective, engaging, and relevant (McDonald et al., 2024; Lopera-Mesa, Echeverri-Molina, & Zuluaga-Mazo, 2023). Without this deep insight into the learner, MOOCs risk a misalignment with participant expectations, which can result in low engagement, diminished learning outcomes, and high attrition rates (McDonald et al., 2024). The design of preliminary needs assessment instruments, specifically a survey questionnaire and a semi-structured interview guide, represents this crucial first step (Grant, 2002). These tools are meticulously crafted to gather the essential data that will inform the

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curriculum, content, and pedagogical strategies of the "Starting a Side Business for Teachers" MOOC, ensuring its resonance and utility for the intended participants (Stefaniak, n.d.). This paper, therefore, contributes a systematic approach to developing these foundational assessment tools, which are vital for ensuring the relevance and impact of specialized MOOCs (Kalkbrenner, 2021). The design of these instruments should also be sensitive to the underlying aspirations for empowerment and well-being that may motivate teachers, as these factors can significantly influence their engagement and persistence in the MOOC (Pan, Lu, & Liu, 2024).

METHOD

This paper details the systematic design process undertaken for two preliminary needs assessment instruments: a survey questionnaire and a semi-structured interview guide (Grant, 2002). These instruments were specifically developed to gain a comprehensive understanding of the target audience for a proposed Massive Open Online Course (MOOC) titled "Starting a Side Business for Teachers," with a particular focus on educators expressing an interest in entrepreneurship (Stefaniak, n.d.). The design of these tools was a multi-faceted process, integrating established principles derived from three critical domains: entrepreneurship education (Ruskovaara & Pihkala, 2013), needs assessment methodologies (Grant, 2002), and MOOC design considerations (Lopera-Mesa, Echeverri-Molina, & Zuluaga-Mazo, 2023). The primary objective of these instruments is to identify key characteristics and requirements of potential teacher participants, including their motivations for pursuing entrepreneurial activities, the perceived barriers they anticipate or have experienced, any specific entrepreneurial skill gaps they recognize in themselves, the resources they deem necessary for initiating and sustaining a side business, and their preferred learning styles and formats within the context of a MOOC (Pan, Lu, & Liu, 2024; McDonald et al., 2024). It is important to note that the survey and interview instruments presented herein are initial designs; they are currently awaiting a rigorous validation process (Kalkbrenner, 2021; Campbell & Nehm, 2013), which constitutes the essential next phase before their deployment in a comprehensive needs assessment study aimed at informing the MOOC's development (Stefaniak, n.d.).

RESULT AND DISCUSSION

The development of effective needs assessment instruments for the "Starting a Side Business for Teachers" MOOC requires a nuanced understanding of teacher entrepreneurs, appropriate assessment methodologies, and the principles that underpin successful entrepreneurship education and MOOC design (Stefaniak, n.d.). The subsequent discussion will explore these facets, detailing how the designed survey and interview guide aim to capture the necessary information to inform a relevant and impactful MOOC (Karunanayaka & Naidu, 2018).

Understanding the Teacher Entrepreneur: Motivations, Barriers, and Context

To effectively design a MOOC for teacher entrepreneurs, it is paramount to first understand their unique drivers, the challenges they face, and the specific context in which they operate (Pan, Lu, & Liu, 2024). Teachers are not a monolithic group, and their reasons for venturing into side businesses can be as diverse as their teaching

specializations (Lako, Myftiu, & Mustafaj, 2023).

The motivations propelling teachers towards entrepreneurship are multifaceted (Pan, Lu, & Liu, 2024). The pervasive influence of the digital economy has significantly broadened the landscape of opportunities, shifting motivations that may extend beyond purely economic gains to encompass the creation of social value and the practical application of academic or pedagogical achievements to address real-world problems (Pan, Lu, & Liu, 2024). For instance, research by Pan, Lu, and Liu (2024) highlights that the digital economy provides a vast stage for teachers to act as innovators, translating research into practice. Furthermore, the intrinsic desire for personal learning growth (PLG) and the ambition to apply accumulated knowledge in new, practical ways can be powerful catalysts for entrepreneurial pursuits among educators (Pan, Lu, & Liu, 2024). The needs assessment instruments, therefore, incorporate questions designed to uncover these varied motivations (Grant, 2002). The survey, for example, might explore the relative importance of financial independence, the desire for autonomy, the pursuit of a passion project, or the ambition to solve a specific societal or educational problem (Stefaniak, n.d.). The semi-structured interviews can then delve deeper into these motivations, allowing teachers to articulate the personal and professional narratives that underpin their entrepreneurial interests (Grant, 2002).

Alongside these motivations, teachers often encounter a range of perceived barriers and challenges (Pan, Lu, & Liu, 2024). Navigating technological considerations, developing effective management strategies, and understanding the relevant policy or legal environments can present significant hurdles for aspiring teacher entrepreneurs (Pan, Lu, & Liu, 2024). Beyond these practical challenges, educators, particularly those from non-business disciplines, may experience an "outsider position" when contemplating entrepreneurship, as noted by Crisan et al. (2023). This can manifest as difficulties with entrepreneurial terminology, which might be perceived as "fuzzy," "vague," or mere "buzzwords," creating a psychological distance from the concepts (Crisan et al., 2023). Additionally, some teachers may lack inherent interest or foundational knowledge in business concepts, or they might hold stereotypical representations of entrepreneurs that do not align with their own identity or values (Crisan et al., 2023). The needs assessment instruments must be acutely sensitive to these potential psychological and practical barriers (Grant, 2002). The language used in both the survey and interview guide has been carefully chosen to be clear, accessible, and non-intimidating, encouraging teachers to openly express their anxieties, perceived limitations, or past negative experiences related to business or entrepreneurship (Kalkbrenner, 2021). For instance, questions might gently probe concerns about time commitment, financial risk, or the perceived conflict between an entrepreneurial role and their identity as an educator (Stefaniak, n.d.).

The context of teacher entrepreneurship is unique (Crisan et al., 2023). Teachers embarking on side businesses are not typical entrepreneurs; their primary professional identity, the ethical considerations inherent in their teaching roles, significant time constraints due to their educational responsibilities, and the specific skill sets they bring from their experience in education collectively shape their entrepreneurial journey (Lako, Myftiu, & Mustafaj, 2023). This underscores the importance of recognizing that entrepreneurship education for teachers must be carefully contextualized (Crisan et al., 2023). It should acknowledge their existing expertise—such as communication, planning,

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and facilitation skills—and focus on helping them bridge these pedagogical competencies with essential entrepreneurial skills (Ruskovaara & Pihkala, 2013). This perspective addresses a potential "dual identity" challenge, where teachers might feel a disconnect between their established role as an educator and the new role of an entrepreneur (Crisan et al., 2023). The needs assessment instruments are designed to explore this intersection by prompting teachers to reflect on how their teaching skills might be transferable to an entrepreneurial context (Grant, 2002). For example, interview questions could explore how they envision integrating a side business with their teaching careers, what specific support systems they feel are necessary given their professional background, and how they perceive their teaching strengths (e.g., curriculum development, student engagement) as assets in a business venture (Stefaniak, n.d.). By framing entrepreneurship in a way that resonates with their existing professional identity, the MOOC can better support them in navigating this dual role, transforming a potential challenge into an opportunity for synergistic growth (Lako, Myftiu, & Mustafaj, 2023). The instruments will also investigate the types of organizational and policy support teachers perceive as necessary, drawing from indicators such as the need for systematic planning for entrepreneurial development or support in navigating intellectual property, which are crucial for fostering academic entrepreneurial ability (Pan, Lu, & Liu, 2024).

Methodologies for Assessing Needs in MOOC Development for Teachers

The selection and design of appropriate needs assessment methodologies are critical for gathering meaningful data that will inform the development of the "Starting a Side Business for Teachers" MOOC (Stefaniak, n.d.). This involves understanding the foundational principles of educational needs assessment and tailoring specific instruments—surveys and semi-structured interviews—to the teacher-entrepreneur audience (Grant, 2002).

The foundational principles of learning needs assessment emphasize that the purpose of the assessment should fundamentally define the methods employed and the subsequent use of the findings (Grant, 2002). As Grant (2002) suggests, an exclusive reliance on formal needs assessment methods might inadvertently render education an instrumental and narrow process, potentially overlooking creative and professional development needs not explicitly sought. A core concept in needs assessment is the identification of the gap between the current state of knowledge or performance and the desired state (Grant, 2002; Stefaniak, n.d.). Therefore, a comprehensive approach often involves a combination of methods to capture a holistic understanding of learner needs, ensuring that the educational intervention is both targeted and broadly relevant (Grant, 2002). This iterative nature is crucial; the initial needs assessment is not a singular event but rather the commencement of an ongoing cycle (Karunanayaka & Naidu, 2018). The "preliminary" nature of the designed instruments, which are "awaiting validation" as stated in the research abstract, aligns with this iterative philosophy, akin to design-based research methodologies that emphasize cycles of analysis, design, development, and implementation to improve educational practices (Karunanayaka & Naidu, 2018). The findings from this initial assessment will inform the MOOC's first iteration, and feedback from the MOOC itself could then contribute to further needs analysis and refinement, reflecting a dynamic and responsive design process (Renta-Davids, Economides, & Jimoyiannis, 2019).

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The survey questionnaire is designed as a key instrument for efficiently gathering both quantitative and qualitative data from a relatively large and geographically dispersed group of teachers interested in entrepreneurship (Stefaniak, n.d.; Kalkbrenner, 2021). Its structure allows for the systematic collection of information regarding their specific entrepreneurial interests (e.g., type of side business envisioned), their self-perceived skill levels in core business areas such as marketing, financial management, operations, and legal compliance, their preferred learning formats and engagement styles within a MOOC environment, and their access to and comfort with relevant technologies (McDonald et al., 2024). The survey questions are crafted to be clear and unambiguous, probing for specific entrepreneurial skill gaps (Kalkbrenner, 2021). For instance, drawing from the components of Academic Entrepreneurial Ability of Teachers (AEAT) identified by Pan et al. (2024), such as skills in identifying entrepreneurial opportunities, developing those opportunities, and managing entrepreneurial projects, the survey will include items that allow teachers to rate their confidence or perceived competence in these areas. Furthermore, the design considers factors known to influence MOOC engagement, such as the alignment of content with personal interest and the avoidance of barriers like overly technical language or lengthy, unengaging content, as highlighted in research on adolescent MOOC learners, which offers transferable insights into user experience (McDonald et al., 2024).

Complementing the survey, the semi-structured interview guide is crafted to provide richer, more nuanced qualitative data, allowing for a deeper exploration of the teachers' perspectives (Grant, 2002; Stefaniak, n.d.). Interviews offer the flexibility to probe into the underlying motivations, anxieties, specific contextual factors, and detailed expectations that a standardized survey might not fully capture (Grant, 2002). This method allows for the exploration of teachers' personal narratives, their previous experiences (if any) with entrepreneurial or quasi-entrepreneurial activities, and their specific hopes and concerns regarding a MOOC focused on starting a side business (Stefaniak, n.d.). The semi-structured format is particularly valuable as it allows the interviewer to adapt questions based on individual responses, thereby uncovering unanticipated needs, unique challenges, or innovative ideas that teachers might have (Grant, 2002). This depth of understanding is crucial for designing MOOC content and support structures that are genuinely responsive to the lived experiences and aspirations of teacher entrepreneurs (Lako, Myftiu, & Mustafaj, 2023).

A critical aspect of this methodological phase is the subsequent validation of these needs assessment instruments (Kalkbrenner, 2021). As stated in the research abstract, the survey and interview guide are initial designs that require validation (Campbell & Nehm, 2013). This process is essential to ensure that the instruments are clear, relevant, and effectively measure what they intend to measure (Kalkbrenner, 2021; Campbell & Nehm, 2013). Validation procedures, which might include expert review and pilot testing with a small sample of the target audience, will help refine the questions, improve clarity, and confirm that the instruments can reliably elicit the necessary information (Kalkbrenner, 2021; Cook & Beckman, 2006). This step significantly enhances the trustworthiness and utility of the data collected, thereby providing a more robust foundation for the subsequent design and development of the MOOC curriculum and content (Campbell & Nehm, 2013).

Informing MOOC Curriculum and Content: Principles of Entrepreneurship Education and MOOC Design

The data gathered through the validated survey and interview guide will directly inform the curriculum, pedagogical strategies, and overall design of the "Starting a Side Business for Teachers" MOOC (Stefaniak, n.d.). This process involves identifying key entrepreneurial competencies relevant to teachers (Lako, Myftiu, & Mustafaj, 2023), selecting appropriate teaching methods for an online environment (Ruskovaara & Pihkala, 2013), and adhering to established MOOC design principles conducive to professional development (Kopton, Kensbock, & Jaeger, 2024).

A primary outcome of the needs assessment will be the identification of key entrepreneurial competencies that teachers require or wish to develop (Lako, Myftiu, & Mustafaj, 2023). Research indicates a clear need for teachers to acquire entrepreneurial competence to navigate new professional avenues (Lako, Myftiu, & Mustafaj, 2023). The MOOC curriculum must address core components of entrepreneurial ability, such as the capacity to identify viable business opportunities, the skills to develop these opportunities into concrete plans, and the competencies needed to manage and operate entrepreneurial projects effectively (Pan, Lu, & Liu, 2024). Beyond these strategic skills, the needs assessment will likely reveal demand for practical, operational knowledge in areas such as basic financial literacy (budgeting, cash flow, pricing), marketing and sales strategies (particularly digital marketing), understanding the legal and regulatory aspects of establishing and running a small business, and effective time management techniques for balancing a side business with teaching responsibilities (Stefaniak, n.d.). The survey and interview questions are specifically designed to pinpoint which of these competencies teachers feel least confident about or most eager to learn, thus allowing for a data-driven prioritization of topics within the MOOC curriculum (Grant, 2002). For example, the measurement items for AEAT from Pan et al. (2024), such as "possess strong identifying entrepreneurial opportunities skills" or "possess strong management, operation and coordination of entrepreneurial project skills," provide a framework for assessing these specific skill gaps.

The pedagogical approaches employed within the MOOC must be tailored to adult learners, particularly educators who may be new to business concepts, and optimized for an online learning environment (Ruskovaara & Pihkala, 2013). Traditional lecture-based methods may be less effective than more experiential and applied approaches (Ruskovaara & Pihkala, 2013). Literature on entrepreneurship education suggests the value of methods such as experiential learning, project-based work, learning by doing, and the use of compelling narratives, case studies of successful (and unsuccessful) teacher entrepreneurs, and guest contributions from practitioners (Ruskovaara & Pihkala, 2013). The MOOC should incorporate non-traditional teaching methods that encourage active participation and collaborative knowledge creation, where failure is accepted as a learning opportunity (Ruskovaara & Pihkala, 2013). A scenario-based learning (SBL) approach, which situates learners in authentic problem-solving contexts, could be particularly effective in making the content engaging and directly applicable to the challenges teachers might face when starting a side business (Karunanayaka & Naidu, 2018). The needs assessment data on teachers' preferred learning styles and their prior experiences with online learning will be crucial in tailoring these pedagogical strategies (Grant, 2002). For instance, if a significant number of teachers express a preference for collaborative

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learning activities, the MOOC design can incorporate structured group projects or peer-feedback mechanisms (Renta-Davids, Economides, & Jimoyiannis, 2019). A significant consideration here is the potential barrier posed by unfamiliar or "fuzzy" entrepreneurial terminology (Crisan et al., 2023). The needs assessment instruments themselves are designed using accessible language (Kalkbrenner, 2021), and the findings will further guide the linguistic choices within the MOOC (Stefaniak, n.d.). This may involve rephrasing complex business jargon, providing clear definitions, relating concepts to familiar educational contexts, or even co-creating a shared vocabulary with the MOOC participants to ensure clarity and inclusivity, thereby preventing the terminology itself from becoming a barrier to learning and engagement (Crisan et al., 2023).

The overall design of the MOOC must also align with established principles for effective teacher professional development (TPD) delivered online (Kopton, Kensbock, & Jaeger, 2024). Key design principles for MOOCs aimed at professionals include ensuring easy access and usability of the platform, fostering opportunities for professional exchange and networking among participants, providing a protected and supportive space where learners can experiment and learn without fear of judgment, and maintaining a clear domain focus relevant to the target audience (Kopton, Kensbock, & Jaeger, 2024). For a TPD-MOOC, it is particularly important to connect course content and learning activities to the teachers' educational reality and classroom practice, even when the subject is a side business, as the learner's primary identity is often still that of an educator (Renta-Davids, Economides, & Jimoyiannis, 2019). The MOOC should feature clearly defined learning objectives, promote collaborative learning opportunities, and actively work towards creating a vibrant learning community among peers (Renta-Davids, Economides, & Jimoyiannis, 2019). The needs assessment will gather specific data on what kinds of support, interaction (with instructors and peers), and community features teachers would value (Grant, 2002). For example, understanding concerns about a lack of interaction, a common barrier in MOOCs (McDonald et al., 2024), can inform the integration of synchronous sessions, moderated discussion forums, or peer-mentoring initiatives (Renta-Davids, Economides, & Jimoyiannis, 2019).

Finally, the MOOC must directly address the learning preferences and resource requirements identified through the needs assessment (Stefaniak, n.d.). This includes preferences for different content formats (e.g., short video lectures, downloadable readings, interactive simulations, practical templates, peer-assessed assignments, as are common in xMOOCs (Karunanayaka & Naidu, 2018)), desired levels and types of interaction (Renta-Davids, Economides, & Jimoyiannis, 2019), and specific resources teachers believe they will need (e.g., business plan templates, lists of funding sources, tools for market research, mentorship opportunities) (Pan, Lu, & Liu, 2024). The MOOC design should incorporate rich media content, organize knowledge into manageable units rather than traditional class hours, and ensure clear management of the learning process (Lopera-Mesa, Echeverri-Molina, & Zuluaga-Mazo, 2023). The inclusion of visual and graphic content, alongside concise and clear language, will be prioritized to enhance engagement and comprehension, mitigating potential barriers identified in MOOC usability studies (McDonald et al., 2024). Ultimately, the MOOC should function as more than just a repository of information; it should act as a scaffolding mechanism (Karunanayaka & Naidu, 2018). Recognizing that starting a business can be a daunting prospect, especially for those new to entrepreneurship and potentially facing skill gaps or

psychological hurdles (Crisan et al., 2023), the MOOC aims to provide structured support (Renta-Davids, Economides, & Jimoyiannis, 2019). Design elements like professional exchange for peer support (Kopton, Kensbock, & Jaeger, 2024), a protected space for safe learning and experimentation (Kopton, Kensbock, & Jaeger, 2024), connectivist principles fostering networked learning (Renta-Davids, Economides, & Jimoyiannis, 2019; Karunanayaka & Naidu, 2018), and scenario-based activities (Karunanayaka & Naidu, 2018) can create a nurturing environment. The needs assessment will specifically explore the level of guidance and support teachers feel they need to transition from learning abstract concepts to taking concrete entrepreneurial actions, informing the design of practical exercises, feedback mechanisms, and community support structures that facilitate this crucial step (Stefaniak, n.d.).

CONCLUSION

The development of a Massive Open Online Course tailored to the entrepreneurial aspirations of teachers necessitates a foundational understanding of their unique needs, motivations, and challenges. This report has underscored the critical importance of a needs-driven approach to MOOC design, emphasizing that a thorough preliminary assessment is indispensable for creating an educational intervention that is both relevant and impactful for specialized professional groups such as teacher entrepreneurs. The detailed design of the survey questionnaire and semi-structured interview guide, as outlined, represents this vital foundational phase, meticulously crafted to elicit the nuanced information required to shape an effective learning experience.

The systematic approach to designing these needs assessment instruments makes a significant contribution to the broader field of teacher professional development and the burgeoning area of teacher entrepreneurship. By carefully identifying teachers' motivations for pursuing side businesses, the barriers they perceive, the specific entrepreneurial skill gaps they possess, their resource requirements, and their preferred modes of learning, the resulting MOOC, "Starting a Side Business for Teachers," holds a substantially higher potential to genuinely empower educators. Such an informed approach can more effectively support their professional diversification, foster valuable skills, and potentially enhance their overall career satisfaction and economic well-being.

Looking ahead, the survey and interview instruments, currently in their initial design phase, are poised for validation. This validation process is the crucial subsequent step before the full-scale needs assessment study can be conducted. The rich data harvested from that study will then directly inform the iterative development of the MOOC's curriculum, content, pedagogical strategies, and support structures. This methodical progression, from careful instrument design through validation to data-driven MOOC development, exemplifies a commitment to creating high-quality educational interventions. Ultimately, such carefully designed and contextually sensitive MOOCs have the potential to play a significant role in cultivating entrepreneurial skills and mindsets among teachers, enabling them to explore new professional horizons and contribute their unique talents in innovative ways.

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