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Important Teacher Qualities for Integrating Blended Learning in Higher Education

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Abstract: Blended learning is widely accepted in Peruvian higher education for a number of reasons, including the fact that it allows students more leeway to accommodate their own unique schedule and learning needs. The present qualitative research investigates the qualities of effective teachers that are crucial to the successful implementation of blended learning from the vantage point of experts, who can gain valuable insight into the causes of organizational problems and the best strategies for resolving them. There are seven positive characteristics of blended learning teachers, such as the ability to recognize the need for pedagogical change or the confidence to incorporate technology into learning processes, and four negative characteristics, such as a lack of familiarity with blended learning or anxiety about students' use of technology. Blended learning in higher education is investigated here to identify the factors that influence it.

Keywords: Blended Learning; Higher Education; Students; Teachers; Teacher Qualities.

1 Introduction

The use and implementation of blended learning present significant challenges for Peru's higher education system [1]. When it comes to higher education, there are numerous benefits to using blended learning. These include flexible and personalized curriculums, responding to students' diverse backgrounds by using differentiated instruction, or increasing student engagement with learning materials [2]. Many variables that influence the implementation of blended learning have been addressed in earlier studies. For example, [3] studied how organizational policies and methods, structural difficulties, and support for instructors impact the adoption of blended learning in educational institutions. There is a lot of attention paid to the design and context of blended learning, as well as how students feel about it. However, the teacher is a critical player in every educational reform effort. The path of the teacher towards the implementation of blended learning calls for more than only the development of new skills or the alteration of pedagogical responsibilities.

Teachers' ideas about technology and pedagogy, for example, need to be addressed as well. Teachers' emotions, such as a lack of confidence, are inextricably linked to their ability to implement new teaching methods into their classrooms. To summarize, instructors confront several problems when adopting blended learning, including acquiring new teaching and technology skills, dealing with shifting pedagogical responsibilities, or managing the risks involved with providing courses in a mixed format. Every one of these variables has an impact on the choices and actions that instructors take, including the implementation and design of blended education. There are, on the one hand, many university professors who embrace the idea of blended learning and effectively rework their courses [4]. A shortage of time or an increase in the amount of teaching, whatever noble the objectives, prevents many university lecturers from adopting blended learning. In order to ensure that blended learning methodology is firmly rooted in higher education, a thorough examination of teacher traits and characteristics that influence the implementation process in both directions is essential.

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Conceptual background

Blended learning in higher education

The increased usage of blended learning by institutions in Peru over the past two decades has led many to call it the "new normal" in higher education. The adoption of blended learning has effects on students, numerous institutional systems and structures, and the attitudes and pedagogical beliefs of teachers. There has been a great deal of educational study on the pedagogical topic. Blended learning, while its precise definition is still unclear, may best be defined as an intentional mix of online and classroom-based training that stimulates and enhances learning in both contexts [5]. The definition's openness allows for a wide range of applications and interpretations, which in turn increases the relevance of how instructors envision and implement blended learning.

Blended learning has been adopted by educational institutions in Peru for a number of reasons, including more adaptability to meet the needs and backgrounds of students and lower dropout rates. Blended learning has been the subject of much research in recent years as academics try to figure out how to put it to good use in higher education. A recent study by [6] indicated that combining flexibility, encouraging interaction, and aiding students' learning processes are four of the most important issues for creating blended learning. Synchronous videoconferencing in mixed courses was studied, and it was shown to be important for classroom and online students to have equal access to teaching. In this study, it examined the quality of talks in blended learning and highlighted the need of clarifying how online and face-to-face discussions are merged. In the context of blended learning, companies confront a variety of issues related to strategy (definition and goal of blended learning, policies, and execution level) and structure (technology and administrative systems, governance etc.) as well as support for this kind of learning (technical and pedagogical support, faculty incentives).

There is a lot of attention paid to the function and position of the instructor in the process of blended learning implementation. There are six factors that contribute to the adoption of blended learning, according to the study. When it came to introducing flipped (blended) teaching at universities, researchers looked at four different factors: the amount of work students had to do in the classroom, the quality of instructors' professional development, and their own views on the use of technology in education. In research of 169 university professors, the authors found that inner challenge drive and extrinsic compensation were the most important factors influencing the uptake of flipped instruction. The study also looked at how teachers in two university programs were perceived in the context of encouraging online debates. As a result of their research, they believe that online facilitators have the habits of being self-aware and open-minded. Last but not least, it looked at the impact of blended learning on university teachers in a distant language course, and argued that the shift to a blended curriculum goes beyond the simple acquisition of ICT skills but also requires the addressing of teachers' identities in order to understand the full potential of new media [7].

Teacher attributes

Higher education professors and university faculty have a wide range of responsibilities. Research and teaching are intertwined, and academics are required to use quickly changing educational tools. As a result of the high demands placed on teachers by students, they must possess an extensive range of skills and information, known as competencies. Teaching, on the other hand, is more than just the sum of one's educational skills and responsibilities. An "ongoing process of integration of the personal and professional aspects" to becoming and becoming and teaching are examined [8]. For researchers, a dynamic process like "professional identity" is an appealing concept. Teachers, they say, can better deal with educational change if they address issues of professional identity. Identifying one's professional self, according to this definition, is about more than just "knowing what to do" or "having the right credentials."

"Attributes" is derived from the Latin word *attribuere*, which means "assign to". Attributes are described as "characteristics or traits that characterize an item or a person" in this definition. Attributes and traits may be seen as building blocks for a person's personality in this manner [9]. A person's personality is defined as the "dynamic arrangement inside the individual of those psychophysical processes that govern his typical behavior and cognition" The definition is presented in a clear and concise manner. "Dynamic organization" refers to the way a person's many characteristics are intertwined and continually evolving. Both psychological and physical components of a person's personality are emphasized by the term "psychophysical." Personality is not only a person's ideas, but also their behaviors, and the use of the word "determine" underscores this. Every individual is distinguished from others by the peculiarities of their ideas and actions. They were referred to either traits or personal dispositions, depending on the context. Qualities that are relatively resistant to change and characteristics that are extremely adaptable to external circumstances might be distinguished by it. In this research, the term "teacher characteristics" is used to scientifically capture any reasonably constant personality feature of the instructor – awarded to teachers by specialists in higher education on blended learning – that influences the process of implementing blended learning.

Purpose of the study

Numerous academic establishments have embraced blended learning in recent years for a variety of reasons, making this pedagogical notion the "new normal." One of the most important considerations in the adoption of blended learning is the role of the instructor. As experts tend to be better at forward thinking and addressing complicated practical issues, this research examines experts' thoughts on the implementation of blended learning in higher education by identifying crucial teacher qualities from a holistic viewpoint. Holos, the Greek word that originally inspired the term "holistic," meaning "whole" in English. It is a belief that all aspects of life, including evolution, ecology, and human psychology, can be understood as a whole. An integrative approach to teacher education research aims to bridge the gap between diverse paradigmatic points of view. Because of the comprehensive approach used in this research, teachers with reasonably steady blended learning implementation features may be identified. How can blended learning in higher education be successfully implemented by faculty members with the right attributes? This study topic was further broken down into the following sub-questions: When it comes to promoting blended learning, what qualities in a teacher have been shown to have the most impact according to educators? Blended learning implementation is hampered by certain teaching characteristics, according to experts.

2 Methods

Expert interviews

Qualitative techniques and indirect metrics are often employed to study the underlying interpretations of practitioners. Expert interviews have been proposed by researchers as a helpful and credible empirical research tool for revealing insider process knowledge of practical complicated situations. According to this definition, an expert is "someone who is responsible in some way or another for the creation, implementation or monitoring of an issue, or who has privileged access to knowledge about people or decision processes." It's difficult to define an expert, although literature agrees on the following generalizations about what it means to have expertise:

- Experts are superior at choosing pertinent details from big data sets and devote more time to qualitatively examining situations.
- Experts comprehend abstract concepts better than beginners due to their ability to evaluate the underlying structures of issues.
- Experts prioritize professional practice and account for more intricate organizational issues.
- Experts generate more rational and suitable answers than non-specialists.
- Experts transfer knowledge to different disciplines with greater ease.
- Experts get more knowledge via intuition, emotion, and soft skills.
- Furthermore, specialists display specialized knowledge.

Technical expertise (knowledge of facts and figures), process expertise (knowledge of how things work and how they interact with one another in an organization), and explanatory expertise are all distinct from one another (interpretations, points of view, meanings and explanations held by the expert). According to this study's purpose, we focused on specialists who have been directly engaged in the implementation of blended learning at higher education institutions and hence have more contextual process expertise than instructors who employ blended learning in their own teaching departments or faculties. As a result, professionals have a wealth of information that may be put into practice.

Participants and data collection

Concentrating on a limited number of typical examples allows for in-depth analysis of a specific phenomenon via the use of intensity sampling. Using websites, LinkedIn profiles, and the personal networks of the study team, all universities were included in the sample procedure to assure representativeness. Also included in the study were specialists from university colleges, which have teaching styles that are quite comparable to those of universities. A total of fifteen people were asked to attend by email. Twelve experts consented to participate in the interviews freely after being briefed about the study's nature and objective and signing an informed consent form. Based on their qualification, blended learning experience, and references to blended learning in their LinkedIn accounts, all participants were. Within our study group, the chosen members were recognized for their skills. Table 1 provides an overview of the experts, their backgrounds, and their blended learning responsibilities.

Table 1: Experts and their blended learning role.

Expert ^a	Background	Role
Marc	PhD Educational Sciences and Innovation	Educational advisor and designer, project leader
Luke	MSc Educational Sciences	Curriculum and instructional designer, policymaker and implementer of educational technology
Finn	MSc Communication Sciences	Advisor technology enhanced teaching and learning
Frasier	MSc Psychology and Educational Sciences	Director teacher training institute
William	MSc Educational Sciences, E-learning	Head of research on educational innovation
Charlotte	PhD Educational Sciences	Professor in e-learning design and educational technology
Alice	PhD Educational Instructional Technology	Associate lecturer and researcher in educational technology
Ferguson	Higher professional education Technology enhanced learning	Project leader E-learning in higher education
Agatha	PhD Educational Sciences	Researcher in instructional psychology and technology
Grace	PhD Educational Sciences	Project leader educational technology
Travis	MSc Computer Engineering + certificate Educational Technology	Educational advisor blended learning
Harry	MSc Instructional and Educational Sciences	Instructional developer and researcher

The experts were requested to produce a relevant case study on the adoption of blended learning in their business in order to begin the interview (successful implementation or lessons learnt). At the beginning of the conversation, the experts discussed a real-world example of blended learning implementation. A course design in the organization's online learning environment was used by several professionals to demonstrate the practical example. Blended learning, as described in the conceptual background part as a planned mix of online and classroom-based training that engages and encourages learning, was equally well understood when the experts' practical examples were elucidated. The initial author conducted in-depth interviews with each subject at a different place. The interview lasted an average of 62.75 minutes (SD = 13 minutes), ranging from 39 to 86 minutes. The initial author made it clear that specialists may speak freely and that all data would be handled anonymously in order to maintain a positive working environment. Before the interview could begin, each subject had to sign a permission form stating that they had read and understood the terms of the agreement. For data analysis, all twelve interviews were recorded and transcribed verbatim. Because experts dislike being constrained to a small range of questions, a semi-structured interview guideline was established and reviewed by the study team in order to allow experts to express themselves freely. This research focused on instructors in order to find significant teacher traits applicable across settings, even though the experts properly addressed contextual difficulties such providing adequate organizational support, academic leadership or cultural variations across faculties. Data analysis did not take into account the settings of the specialists at their universities or university colleges.

Data analysis and trustworthiness

An expert in the topic of study would be ideal for the interviewer, according to what he or she has to say. To achieve this criterion, the research team determined that the first interviewee's history as a teacher, educator, and trainer was adequate. Researcher prejudice, for example, on the notion of blended learning, is a problem that is of concern to researchers. Preparation for and participation in the interview included reflecting on one's own ideas about the perceived advantages of blended learning, as well as one's own personal pedagogical views and preferences. During the interview, the conversation was sparked by allowing the experts to respond in their own way. The experts' ability to maintain objectivity throughout the interview was enhanced by the fact that they are not readily swayed and are used to defending their own views.

In addition, data was evaluated in many stages to ensure its integrity and decrease the risk of bias. Research team members and co-authors served as crucial friends in the process of drawing findings and interpretations from data that they had collected. Open and inductive coding in NVivo 12 was used in a first reading of the transcripts to enable the first categories to emerge. During this phase, the first themes and categories began to emerge. Coauthors coded three interviews inductively and parallel to the first author after an introduction to the theoretical notions that support this research. An insufficient level of comparability was found when the publicly coded interviews were compared manually. [11] also found overall trends, although they "packaged" their findings differently than the other researchers. The first author wrote "a desire to investigate technology" but the second coder labeled this as "a capacity for investigation of technology". The coding system was fine-tuned and finished by the original author using input from the research group and comparisons with conceptual frameworks. Next, the study's theoretical foundation and goal were explained to a third researcher with experience in the study's topic. The researcher used NVivo 12 to independently code four of the twelve interviews based on the completed coding scheme in order to increase the level of dependability. NVivo 12's coding comparison inquiry estimated inter-rater reliability at 97 percent agreement. To ensure that observations and reach were more stable, the

twelfth and final interview was done months after the first. Finally, there are member checks, which are neither a verification approach nor a danger to the veracity of the data they provide.

3 Results and Discussion

This research uses a holistic approach to discover the characteristics of teachers that contribute to or impede the adoption of blended learning in schools. For the sake of implementing blended learning, this study gives expert insights and in-depth information about crucial teacher skills and features. The interviews revealed two groups of connected characteristics. Relationships between the (sets of) qualities were discovered during data analysis [12], [13]. As a result, the focus of this part is on the connections between the various results.

Blended learning implementation is a two-way street: There are some who embrace it, and there are others who resent it or even reject it entirely. In this part, we'll go through both sets of qualities.

Adaptive attributes

There are seven adaptable traits that contribute favorably to the deployment of blended learning in higher education, according to experts. As shown in Table 2, the adaptive qualities are organized by expert, with supporting evidence included after each group.

Table 2: The Adaptive Attributes

Expert	Adaptive Attributes						
	Teaching and education at the center	Student-centered pedagogical beliefs at the heart of the matter	Realizing a need for change: the pedagogical wake-up call	Daring to experiment (and fail)	Daring to speak out: sharing needs and concerns	Being able to critically reflect as a teacher	Connecting technologies to learning processes: the creative professional
Marc	✓	✓	✓	✓	✓	✓	✓
Luke			✓		✓		✓
Finn	✓	✓	✓			✓	✓
Frasier			✓	✓		✓	✓
William	✓	✓			✓	✓	
Charlotte	✓	✓	✓			✓	✓
Alice		✓	✓	✓	✓	✓	✓
Ferguson	✓		✓	✓		✓	
Agatha	✓			✓	✓	✓	✓
Grace	✓	✓	✓	✓	✓	✓	
Travis	✓		✓	✓	✓		✓
Harry		✓	✓	✓	✓	✓	✓

Teaching and education at the center

More than half of the experts said that the conviction in the importance of education and teaching in higher education has largely contributed to the acceptance of blended learning. In the words of William, "teachers who typically have a passion to offer effective education" are more likely to embrace blended learning. A key characteristic of an employee's role, according to Agatha: "seeing the importance of education and considering education as a significant component of one's employment" Or as Grace put it: "Teachers who enjoy teaching are really the excellent ones to go to blended learning." There are "those instructors [who use blended learning] who believe in education's significance," Marc said. "And they believe that they [the teachers] will gain from it in their careers."

Student-centered pedagogical beliefs at the heart of the matter

For the most part, the experts agreed with the broad consensus that education and teaching are important from the standpoint of students. They made a point of mentioning the student's voice. In the words of Grace:

The desire to coach pupils is also important. If you don't feel like coaching or directing any longer, then it's not going to work. This is the most significant motivator for instructors to use blended learning, in my opinion.

When asked about instructors that want to be more modern, William said that they "want to be more current, want to engage kids more, and want to do it in a new manner." There's a deep-seated constructivist approach to education and teaching among those teachers who employ blended learning, according to Alice. When questioned about the importance

of blended learning adoption, Charlotte described attributes 5.1.1 and 5.1.2 as follows:

In the first place, there are people's ideas about what constitutes "excellent education," and then there's the constant need for fresh interpretations of what "student-centered" really means. Listening to pupils is also an important part of this.

Realizing a need for change: The pedagogical wake-up call

Blended learning's adoption process began with a pedagogical realization, according to the majority of specialists [14]. When it came to implementing blended learning, it was not enough to just have an educational philosophy as indicated in the preceding section. A teacher who tried blended learning understood that something had to change based on student input," Ferguson said. "A blended learning instructor came to our department with the query, 'I lost my pupils somehow and I wanted to reverse that.'" Teachers who use blended learning tell us, "You see, I have too many pupils; I have a lot of huge groups; and how can I stimulate those large groups more?," says Finn. "That sort of teacher that embraces blended learning is a teacher who really collides with a lot of limits, for example, there must be in-class differentiation, and says "I believe we should find alternative methods to handle these difficulties here,"" Frasier said in closing. Fergie backed up his colleague's sentiments by saying, "Yes, the instructor had understood himself that something had to change," and he himself had the thought of attempting something new, and thinking about "How can I actualize that?"

It was shown that instructors are motivated to use blended learning when they are faced with a variety of pedagogical challenges. Change is driven mostly by educators' recognition of student-centered pedagogical demands for blended learning, such as increasing student engagement in big groups and addressing the variety of heterogeneous student groupings while still tackling difficult topics that many students face. Another reason for using blended learning was to meet the demands of students from foreign countries or those who are full-time workers. "We have several topics with many different student populations and large variances in students' past cognitive capacities," for example, remarked Finn.

Daring to experiment (and fail)

Blended learning implementation, according to the majority of experts, was unquestionably connected to the pedagogical use of technology. More than half of the experts identified an important attitude toward the use of technology in blended learning [15]. Daring to explore (and fail) is the best way to describe this mentality. To paraphrase Frasier: You have professors that are always seeking out the latest and greatest things to study for their own advancement. A readiness and a desire to explore the affordances of technology for learning are two terms used by Alice to describe these instructors. Experts say that experimenting with new technology as part of the educational process also involves dealing with failure or perfectionism. It's important to have a healthy curiosity in new things, but don't be alarmed if your experiments fail or your pupils complain. If you're a perfectionist, then you may not be the best person to lead a blended learning course. If you're experimenting, you're going to feel vulnerable.

It's about being willing to take a chance, yes. Despite the fact that a teacher warned of the danger, the student refused to accept his advice. After failing, other educators may have stated, "I won't ever do it again." It's all about being willing to experiment with fresh ideas.

An important trait for blended learning, according to Harry: "I believe a daring to experiment with tools and try out new things is a significant attribute." It's also important to remain resilient in the face of setbacks.

Daring to speak out: Sharing needs and concerns

About two-thirds of the experts surveyed said that communication was an important part of their role. According to Agatha, "I believe communication is really vital, understanding what occurs from each other is quite crucial." Yes, also in respect to those who serve as a source of encouragement and support. "Where does transparency take place?" To paraphrase William: "We really love it when instructors come to us and say this example in your blended learning rubric, we can't do it yet." What we want to hear is precisely what you are saying." "Grace concurred," Grace said.

Especially that kind of openness. Using modules and online assignments are examples of things that people don't agree with, and it's important to be honest when they say so. If those three instructors who embraced blended learning] didn't felt comfortable talking about it, the conversation wouldn't have taken place.

However, Alice also noted contact with students and the mutual understanding of diverse student viewpoints, despite the fact that most experts focused on collaboration among colleagues and/or project leaders:

In the end, e-learning and blended learning come down to whether or not you can communicate with your students. This is not a "for or against this or that" argument, either. However, it's important that you show some consideration for the views of others, even if you don't agree with them. It might be more difficult to establish conversation online at times.

Being able to critically self-reflect as a teacher

Almost all experts cited the ability to critically reflect on one's own teaching practices as an essential quality [16]. "Teachers are able to question themselves 'why do I behave this way, what is my educational aim here?', there is a type of pedagogical reasoning component here," Alice said. Finn said the same:

The instructor [who used blended learning] began with a student assessment in which pupils expressed concern about their test readiness. On the basis of this realization, he began to develop two-weekly activities that the students were required to prepare online and discuss in real-life contact meetings two weeks apart.

According to Marc, one of the most significant teacher characteristics for the adoption of blended learning is the ability to "self-critique and alter your teaching techniques if you discover something is not working. Teachers who can question themselves, "Why do I behave this way, what is my educational aim here?" have a certain level of pedagogical reasoning competency, according to Alice. Finally, Harry said:

Even though it's not a requirement, I feel that instructors who use blended learning should be equipped and ready for critical self-reflection. While it may be difficult to encourage everyone to let go of their preconceived notions, I believe that little efforts may be taken by anyone.

The creative professional as a link between technology and educational procedures "connecting those glamorous or non-shiny tools to learning processes" is identified by more than half of the experts as a relevant competency in respect to technology and blended learning (Alice). An ability to integrate ICT tools to learning processes was mentioned by the specialists. Teachers like Luke and Marc, for example, talk about how they utilize 'Padlet' to enrich class discussions. Both highlight that the instrument isn't the most essential part of the process. Deliberate decisions and constructive alignment between learning outcomes, pedagogical choices and creative use of technology are the most important aspects. In Marc's comment, this is quite evident:

What is Padlet? How can we make better use of it in our discussions and interactions? What's the catch here? Teachers who can effectively use this technology have a distinct advantage over those who cannot. Even whether they select Padlet, or any other service, it's important to think about what the additional value is before making a decision.

"Yes, they [teachers who use blended learning] appreciate the additional value of technology and know that creativity is vital for the structure of your blended learning class," Marc said of instructors who use blended learning. "How do they view technology and how do they realize how technology may be used for educational reasons," Charlotte explained this quality. In my opinion, technology does not play a determining role, but rather a supporting function." As a last example, Travis referred to educational innovation with ICT tools as a 'stream':

Successful blended learning instructors have a pedagogical stream, which is a flow of technology-based learning activities [16], [17]. They put up a series of activities that are easy to follow by combining the appropriate parts and equipment. Those that contact kids on a regular basis have a tale to tell. In other cases, students choose to work on a sequence of online projects that gradually get more difficult.

Maladaptive attributes

Blended learning is having difficulty gaining traction because of four flaws in the design that experts see as impeding the process. Table 3 summarizes the harmful characteristics, organized by experts, and then provides evidence to back up their conclusions.

Table 3: Overview of maladaptive attributes.

Expert	Maladaptive attributes			
	Prioritizing other tasks over teaching	The teacher at the epicenter	Blended or blurred learning: in need for a clear understanding	Feeling anxious about (the implications of) technology
Marc	✓	✓	✓	
Luke		✓		
Finn	✓			✓
Frasier			✓	✓
William		✓		
Charlotte			✓	
Alice	✓	✓	✓	✓
Ferguson			✓	✓

Agatha	✓		✓	✓
Grace				✓
Travis			✓	
Harry	✓	✓	✓	✓

Prioritizing other tasks over teaching

There are a variety of duties and responsibilities for teachers in higher education, and universities are no exception [18], [19]. The implementation process at universities is hampered by the idea that education and teaching are less essential than other job-related responsibilities, such as projects or undertaking research, according to half of the experts who were primarily engaged in university settings at the time of the interview. Marc, an expert in his field, said:

A large number of instructors and professors prioritize other work activities that offer immediate results, such as projects, and some even consider teaching is a waste of time, something that you have to do in a rush and between other obligations.

"Teaching comes in second place, in contrast to research," it said when asked about the importance of research. There is a plethora of magazines to choose from. When it comes to becoming a member of committees or other groups that are considered to be important, research takes precedence," It's also been noted by Agatha: "Someone who thinks research comes first and teaching is an afterthought would not invest in blended learning." He ended the discussion by saying that professors who just claim that they do study before teaching may not be so confident in their approaches, particularly if they have to give up on traditional ex-cathedra teaching methods.

The teacher at the epicenter

The pedagogical assumption that instruction is primarily seen as teacher-centered was cited by half of the experts as a barrier to the adoption of blended learning. To put it another way, instructors who feel that teaching is primarily a one-way transmission of information from the teacher to the students impede the adoption of blended learning. Educators that are implementing blended learning, like Harry, are more concerned with the outcomes they want to accomplish with their pupils than those who are just concerned with presenting information. Using PowerPoint slideshows to convey subject is what instructors prefer, according to William. Alice stressed the following as well:

A sort of instructor that believes "When I have handled the subject and I have shown it [the learning content] in class, the pupils simply have to accept that [and accomplish the learning by themselves]". To claim "If I disseminate something, then they must have comprehended it" does not work in blended learning contexts.

Blended or blurred learning: In need of a clear understanding

According to experts, lack of teacher experience and understanding of blended learning is a major obstacle to its effective implementation [20], [21]. During meetings with instructors, Frasier and Travis said, "And then the dialogue begins, "but what do you mean by integrated learning?" 'And what precisely do I have to do?'. Those are questions that are often asked. Initially, there was a lot of doubt regarding those principles, to paraphrase Ferguson. [22] Some of them don't know how to implement blended learning, or to encourage online learning and what technological options are available to them in the learning environment. As a result, it is unquestionably one factor. For more information about blended learning, see this link from Alice:

The majority of the time, I encounter educators who have no idea what blended learning even entails. They [teachers] frequently have no idea what the notion is or how to explain it to students. Blended learning policies have never provided a clear description of what it means.

In the end, experts say, instructors are more likely to make rash decisions or act on incomplete information. In Marc's words,

As a result, a common misconception regarding blended learning is that it's all about integrating as many ICT resources as possible. [23] Blended learning seems to be misunderstood by many individuals. Or, 'Oh, integrated learning?' they exclaim. So, you're going to record my two-hour lectures and post them online?'

Some lecturers videotape their web lectures and post them online, then tell students, "Go ahead now." Harry said: Obviously, it doesn't work, and then they claim that students aren't attending lectures and that their examinations are worse than they were before to this.

To sum it up, experts say that instructors typically embrace new technologies to free up time for other responsibilities and initiatives (Marc). [24] When teachers are faced with a reduction in teaching time, they opt to mix the whole course., " says Harry. When this is done, "it will take less time [to educate]." "Teachers assume they have to teach less when utilizing blended learning, therefore in that sense, they aim to generate more time for projects," says William.

Feeling anxious about (the implications of) technology

It is evident that implementing blended learning requires the use of a wide range of technology, from online learning environments to social media and other external resources [25]. Anxiety about technology, a fear of failure, and a sense of insecurity are said to be the biggest obstacles to blended learning, according to more than half of the experts surveyed. "Some instructors don't want certain items published someplace on a medium that they don't know how long it will be online," says Finn. When it comes to the way people seem on film, there is a certain amount of concern. Ferguson was on the same page as me:

There is a possibility that teachers are terrified of failure, which may be a contributing factor. Teachers are still hesitant to participate due to the high technical barrier. As a follow-up, they remark "I can give it a go, but I don't want to be humiliated in front of my pupils" if anything goes wrong.

"I get the idea that individuals are hesitant to open up their materials, fearful of not attaining their objectives, worried of not being able to manage all their knowledge if they transition to blended learning," says Grace. They discussed uncertainty: "Of course, you never know what will happen; you might feel fear that something could go wrong." Agatha agreed. Let go of the idea that you know what you're doing." On the other side, Frasier and Alice discussed the effects of technology on government agencies or classrooms. There had been a long-blended learning checklist put together by the central services, and that terrified individuals. The excitement had already begun to wane when confronted with a three-page checklist of requirements for the course." Alice remarked:

Because of this, there are many who are more fearful of disappointing others or not following through on their commitments when they are interacting with them online. If someone [a student] placed something vital online and you didn't see it, what would you have done? Is there anything you could have done? "Of course, face-to-face encounters are possible, but they're easier to deal with."

Relationships between adaptive and maladaptive attributes

Firstly, the adaptive and maladaptive qualities in this research have two unique pedagogical assumptions in common. Teacher practices and technological integration are influenced by pedagogical views, which in turn are informed by those beliefs [26]. First, the results in this research recognize the special context of blended learning implementation in higher education by placing teaching and education at the center and adopting a student-centered stance on teaching. The first two adaptable features support the value of a student-centered pedagogical approach in the implementation of blended learning because they provide instructors with the opportunity to experiment with novel teaching tactics and technologies that engage students more effectively.

Researchers found that prioritizing other duties like research or projects and having a teacher-centered pedagogical mindset hindered the uptake of blended learning. According to research, teacher-centered teacher educators are less likely to use technology cohesively, and as a result, need more assistance. The findings of this study have ramifications for other academic departments and faculties. When asked about their first maladaptive attribute, all experts who were exclusively engaged in university teaching contexts stated that it was "prioritizing other activities above teaching". Adaptive and maladaptive qualities in educational ideas might be seen as two sides of the same coin in this context.

Secondly, it is also important to have a thorough grasp of the pedagogical principles that underpin blended learning. It was surprising that the experts did not convey a clear concept of blended learning as an adaptive quality [27]. However, this was cited as a significant maladaptive trait. The adaptive feature of "being able to creatively integrate tools into learning processes" might be believed to automatically incorporate a complete comprehension of the idea by experts. The experts, on the other hand, believe that an "unclear perspective of blended learning" is a major roadblock to successfully implementing this method. The utilization of video and knowledge snippets is an example of blended learning, according to this statement. Teachers, on the other hand, may believe that when they include a video into their course, they are using blended learning. This isn't always the case, however. If you don't know enough about blended learning, you run the risk of making assumptions that aren't supported by evidence.

Thirdly, this research found that instructors' self-reflective competency as teachers is a noteworthy finding. The attitude of "realizing a pedagogical necessity" is associated with this adaptable quality [28]. Findings from peer-reviewed studies on teachers as co-designers during a curriculum innovation are consistent with the realization of a pedagogical need for change. However, despite an emphasis on collaborative curriculum design, the authors claim that "what finally pushed instructors to redesign their context was not a fresh scientific understanding on how to do things, but a profoundly felt and experienced difficulty in their teaching practice". Those who studied the influence of online teaching on faculty innovation and recognized the relevance of reflecting on practice in the process of transitioning face-to-face courses to online learning environments are especially in line with teacher reflection. Researchers in this research, although stating that teachers should be allowed to reflect on their own practice, emphasized that this is especially true when introducing new approaches to instruction like blended learning [29], [30]. Blended learning, according to the experts, encourages

teachers to reflect on their own teaching methods more often. According to this study's findings on student-centered beliefs and attitudes as well as three growth-oriented attitudes and a capacity for self-reflection, the ability to "creatively integrate tools into learning processes" is a competency that surpasses all other adaptive traits [31].

Fourthly, the adaptive quality of "daring to experiment and fail" and the maladaptive quality of "being concerned about (the consequences of) technology" are linked. Daring to try and failing is in line with research that links award-winning online faculty teaching approaches to their willingness to experiment [32]. Teachers who have studied and advocated open communication as a need for teacher cooperation say that "daring to speak out" refers to the bravery it takes to speak out. Anxiety over (the consequences of) technology mirrors both adaptive and maladaptive traits. Teachers who take a risk with technology and don't give up when they fail have lower levels of anxiety and are more likely to be comfortable with the tools they use. It has been shown that being concerned about technology and its consequences might have a negative impact on professors throughout a blending process. According to this, choices to use technology might be affected by bad feelings about it.

This study's conclusions have a variety of practical consequences. Organizations and practitioners interested in the adoption of blended learning might profit from the findings of this research, [33] which shed light on essential teacher qualities. Table 4 provides an overview of probable practice suggestions based on the clustered features.

Table 4: Summary of findings and recommendations for practice.

Teacher attributes	Recommendations
Teaching an education at the center Student-centered pedagogical beliefs at the heart of the matter Prioritizing other tasks over teaching The teacher at the epicenter	Address pedagogical beliefs when organizing professional development initiatives by including reflection questions on teachers' pedagogical beliefs and convictions. Stimulate experimenting with new technologies and organize reflection sessions after having applied a new blended learning approach.
Realizing a need for change: the pedagogical wake-up call	Encourage teachers to evaluate courses from a student perspective in order to become aware of pedagogical needs for which blended learning might offer solutions.
Daring to experiment (and fail) Being anxious about (the implications of) technology	Stimulate an organizational culture in which experimenting (and failing) with technology is allowed. For example, organize events where teachers can experiment with new technologies, guided by experts (innovation labs, future classroom setup, blended learning bootcamps etc.).
Daring to speak out: sharing needs and concerns	Invest in an organizational culture that builds on trust. Promote sharing experiences in a safe environment.
Being able to critically self-reflect as a teacher	Deliberately include teacher reflection activities during the implementation process (by using guidelines for reflection and reflection templates for example). Organize collegial consultation sessions to share experiences and practices.
Connecting technology to learning processes: the creative professional	Invest in sharing best practices and blended learning toolkits that demonstrate how technology deliberately contributes to learning processes
Blended or blurred learning: in need for a clear understanding	Invest in teacher professional development initiatives that enhance insights in the multifaceted concept of blended learning, including paying attention to practical examples (for example a knowledgebase with best practices)

4 Conclusion

When it comes to implementing blended learning, there are numerous factors to consider. It is the teacher who plays a critical role in any effort to alter educational practices. It was the goal of this research to determine whether teacher characteristics add to or detract from the success of blended learning. A qualitative approach based on interviews with experts was selected because experts can better understand the underlying structures of complicated practical issues and have a deeper understanding of the environment in which those processes occur than instructors who use blended learning. A group of higher education blended learning in Peru experts identified seven key teacher attributes for the adoption of

blended learning: (1) placing teaching and education at the center; (2) holding a student-centered pedagogical belief; (3) realizing the need for change in pedagogy; (4) daring to experiment (and failing); (5) sharing needs and concerns; (6) being able to critically self-reflect as a teacher; and (7) being able to connect technologies. When it comes to implementing blended learning, experts say that teachers who prioritize other activities above teaching, have teacher-centered educational beliefs, lack clarity on blended learning, or are fearful of (the implications of) technology are the biggest roadblocks. A fascinating finding is the connection between adaptive and maladaptive behavior, which sheds light on the process by which instructors go from rejecting blended learning to embracing it. For example, mastering the ability to link internet technologies to educational processes necessitates overcoming fear about (the consequences of) technology. Discussing a pedagogical belief's direction with peers might help educators see the need for implementing blended learning.

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Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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