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Artículos científicos

Validación de una escala para medir la participación en los modelos educativos y de emprendimiento en una institución universitaria

Validation of a scale to measure the educational and entrepreneurship models in a university institution

Validação de uma escala para medir a participação em modelos educacionais e empreendedorismo em Instituição universitária

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Resumen

Este estudio plantea el análisis de la propuesta de educación integral de las instituciones adventistas de educación superior a partir de la construcción de una escala para medir la participación en los modelos educativo y de emprendimiento basados en las dimensiones físicas, intelectuales, espirituales (morales), sociales, trabajo manual, colportaje universitario, servicio voluntario y emprendimientos personales. El proceso de validación se realizó con una muestra de 345 alumnos, de los cuales 44.1 % cursaban el último año y 55.9 % eran graduados durante los últimos 10 años de la Universidad de Montemorelos. Los resultados muestran que la escala quedó integrada por 31 ítems agrupados en ocho factores que explican 62.7 % de la varianza total, con un KMO de .878 y un alfa de Cronbach de .875.

El modelo de ecuaciones estructurales evidencia índices de bondad de ajuste aceptables del modelo educativo y el modelo de emprendimiento ($\chi^2 = 25.263$, $p = .089$, CFI = .988, TLI = .980, NFI = .964, RMSEA = .038).

Palabras clave: modelo educativo, modelo de emprendimiento, educación integral, validez de constructo, ecuaciones estructurales.

Abstract

This study proposes the analysis of the comprehensive education proposal of Adventist institutions of higher education from the construction of a scale to measure participation in educational and entrepreneurship models based on physical, intellectual, spiritual dimensions, social, manual work, canvassing, voluntary service, and personal endeavors. The validation process was carried out with a sample of 345 students, of whom 44.1% are seniors' students and 55.9% are graduates of the last 10 years of the University of Montemorelos. The results show that the scale was made up of 31 items grouped in eight factors explaining 62.7% of the total variance, with a KMO of .878 and a Cronbach's alpha of .875 were obtained. The structural equation model shows acceptable goodness-of-fit indices for the educational model and the entrepreneurship model ($\chi^2 = 25.263$, $p = .089$, CFI = .988, TLI = .980, NFI = .964, RMSEA = 0.38).

Keywords: educational model, entrepreneurship model, integral education, construct validity, structural equations.

Resumo

Este estudo propõe a análise da proposta de educação integral das instituições adventistas de ensino superior a partir da construção de uma escala para mensurar a participação em modelos educacionais e empresariais com base no trabalho físico, intelectual, espiritual (moral), social, manual, colportagem universitária, voluntariado serviço e esforços pessoais. O processo de validação foi realizado com uma amostra de 345 alunos, dos quais 44,1% estavam no último ano e 55,9% se formaram nos últimos 10 anos pela Universidade de Montemorelos. Os resultados mostram que a escala foi composta por 31 itens agrupados em oito fatores que explicam 62,7% da variância total, com KMO de 0,878 e alfa de Cronbach de 0,875. O modelo de equação estrutural mostra índices aceitáveis de ajuste para o modelo

educacional e o modelo de empreendedorismo ($\chi^2 = 25,263$, $p = 0,089$, $CFI = 0,988$, $TLI = 0,980$, $NFI = 0,964$, $RMSEA = 0,038$).

Palavras-chave: modelo educacional, modelo de empreendedorismo, educação integral, validade de construto, equações estruturais.

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Introduction

Universities define their educational model based on their philosophical and operational presuppositions, and based on these they develop strategies that allow them to guide their function in relation to serving their audiences. According to the statistics of the Department of Education of the General Conference, currently the universities that belong to the Adventist corporate are distributed as follows: 20 in Africa, 13 in Europe, 35 in Asia, 45 in America and 4 in Oceania (Seventh-day Adventist Church, 2019), which share an educational and entrepreneurial model with general guidelines and adaptations to their particular contexts.

However, to check whether the theoretical model extracted from the review of the literature on the participation construct in the educational and entrepreneurial models has an acceptable goodness of fit, a scale was built that originally had 48 items, which was validated using structural equations in students and graduates of the last 10 years of the University of Montemorelos, which belongs to the Adventist corporate.

Next, the theory that served as the foundation for the construction of the scale is presented, as well as to establish the dimensions in which the constructs were studied and that helped in the elaboration and selection of the reagents.

Educational model

To develop the first part of the scale, the educational model must be defined, the components identified and the dimensions that constitute it documented. The Adventist educational model is defined as the set of theoretical assumptions that emerge from the Bible and White's writings, which give meaning to the set of intentional actions and their relationships in order to achieve a harmonious development of the physical, intellectual, spiritual (moral) and social in students.

The philosophical document of education of the General Conference of Seventh-day Adventists (2001) presents four main components: the first is the student, who is the focus

of the entire educational effort. The second is the teacher, who occupies a vital place in the process. The third is knowledge, which encompasses conceptual, experiential, emotional, relational, intuitive, and spiritual elements; It includes cognitive, technical and soft skills aspects. The fourth is the curriculum, which promotes academic excellence from the perspective of the biblical worldview; In addition, it is made up of four complementary components: instruction, discipline, school life and evaluation.

Dimensions of the educational model

A careful review of the literature is carried out to identify the dimensions raised by different pedagogues that have impacted thinking in education worldwide. In the literature on the development of educational thought, different types of dimensions are presented. For example, Juan Luis Vives (1492-1540) divided education into three stages: the first comprised of children between 15 and 16 years of age; the second integrated by young people between 16 and 25 years old, and the third constituted by the self-taught study (Hernández Conesa and Maldonado Suárez, 2014; Sánchez Márquez, 2009).

Juan Amós Comenio (1592-1679), deeply influenced by the Trinitarian religious doctrine, raises three dimensions in education: God, man and nature, considering biological, psychological and educational aspects. He divides the latter into three fundamental functions: knowledge of oneself and of the surrounding reality (intellectual education), self-direction (moral education) and the aspiration to reach God (religious education) (Ciprés, 2009; Comenius, 2012; Runge Pena, 2012).

John Locke (1632-1704) divides his educational doctrine into three aspects and consequently three goals: physical education, intellectual education and moral education; that is, physical vigor, knowledge and virtue (Gutiérrez Ramírez, 1988).

With a holistic conception of all the human capacities that promote the balanced development of the individual, Johann Pestalozzi (1746-1827) proposes in his pedagogy an anthropology that takes into account the three dimensions of the person: (a) the head, which symbolizes the development of the student's intellect (it is the Greek heritage); (b) the heart, which has to do with the freedom of the subject, the sense of the other and the desire to get closer to God (the Christian heritage), and (c) the hand, which takes into account the care of the body and the technical capacity of man to transform things. It is the novelty of modernity (Horlacher and Parra León, 2019; Soëtard, 2011). In this regard, White (trans. 2014) states:

The nature of man is triple, and the education recommended by Solomon includes the correct development of the physical, intellectual and moral faculties. This comprises more than a knowledge of books or learning at school. It encompasses the performance of our duty to ourselves, our neighbors and God (p. 35).

Magalhães do Nascimento (2017) and Salas Madriz *et al.* (2011) mention that John Dewey (1859-1952) poses an enlightened, human pedagogical activity, which asks "what to teach (ontological nature), how to teach (epistemological and theoretical nature), and why teach (ethical nature)" (p. 18) , which makes knowledge penetrate the heart, head and hands. From this point of view, Dewey maintains that the task of creating a science of education is as endless as the educational process itself.

Maria Montessori (1870-1952) presents three dimensions: physical, emotional and intellectual. The first considers the body as an active organism, with controlled movements, fine coordination necessary to write and manipulate materials, and the ability to perform in some sports that can be practiced until adulthood. In the second, the emotional includes the development of a good self-image, knowledge of their own feelings, sensitivity and consideration for the knowledge of others. In the third, the intellectual, Montessori defines the learner as a being who becomes independent of the adult and who develops intellectual skills, such as reading and writing, among others, that allow him to be able to pursue knowledge and understanding of how find information and use it in different media (Cortés Oliver, 2017).

John Locke, Johann Pestalozzi, John Dewey and Ellen White agree on three dimensions: the physical (vigor, hand), the intellectual (knowledge, mind) and the moral or spiritual (virtue, heart).

Dimensions of the Adventist educational model

Three dimensions were then identified: physical, intellectual, and moral or spiritual. The next step was to know the main components through the review of the literature and based on that information, make the proposal of the reagents or items.

To document these dimensions, specifically for the Adventist educational model, these three dimensions were analyzed in White's ninety titles. The EGW Writings application in Spanish and the Atlas.ti software were used. The first allows tracking the references

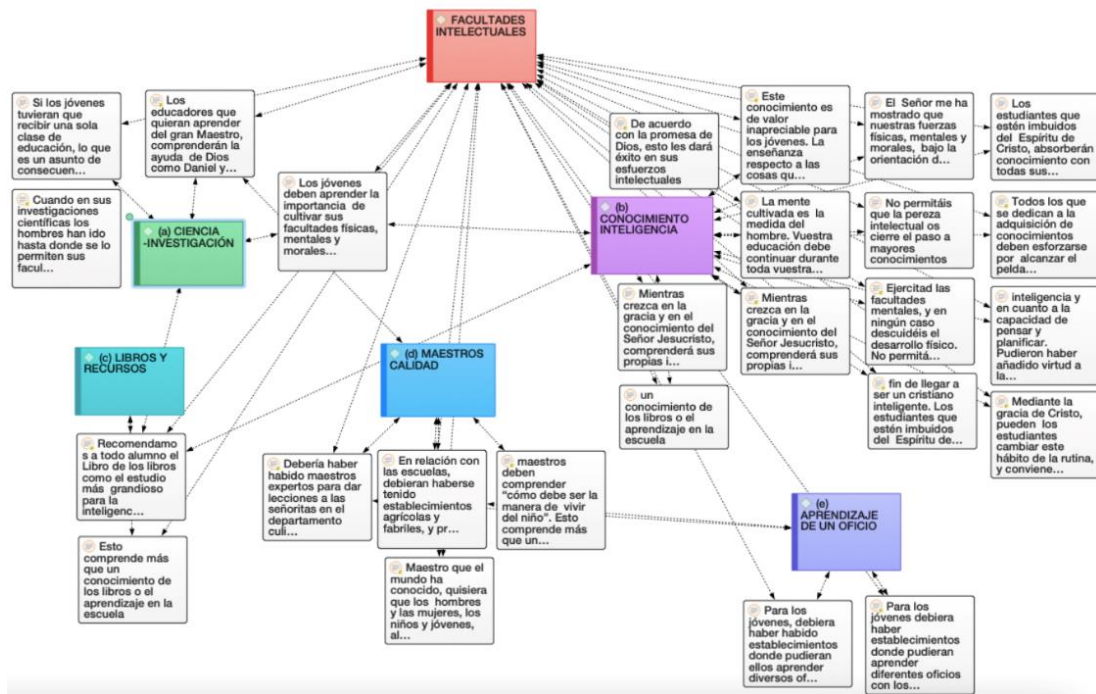
associated with the three dimensions and the software is used to analyze the text through citations, codes, semantic networks and co-occurrence tables.

A total of 113 citations were found for the combination of physical, intellectual and moral faculties, which were carefully reviewed, and 77 were selected. They were categorized according to the context in which they were used: work (13 citations), educational (11 citations), health (34 citations) and religious (19 citations). The same exercise was performed with the combination of physical, intellectual and spiritual faculties. 37 citations were identified, of which 27 were selected. They were cataloged in the four aspects: labor (4 citations), educational (4 citations), health (5 citations) and religious (14 citations).

With these references, semantic networks were created to identify the components of the dimensions. Figure 1 is presented below as an example, where the citations and the components of the intellectual (mental) faculties dimension are found. The same exercise was carried out for the other two dimensions.

With the help of this semantic network, the most important components and associated citations for the intellectual faculties dimension were detected: (a) science-research, (b) knowledge-intelligence, (c) books and resources, (d) teachers-quality and (e) apprenticeship. The first four components coincide with those proposed by Arias Barranco (2015), Delors (1994) and Lombana et al. (2014). Learning a trade is typical of Adventist educational institutions.

Figure 1. Semantic network in Atlas.ti for intellectual faculties



Source: self made

An analysis of co-occurrences between the components and the dimension was carried out to prioritize them. In this analysis the values are interpreted in the range of 0.0 to 1.0, similar to a correlation matrix in statistical software. It was observed that knowledge-intelligence ranked first in the table of co-occurrences with a factor of .50. The second most important was science-research with a factor of .11, followed by teacher quality with .09, apprenticeship with .06, and books and resources with .03. The same analysis was done for the other two dimensions. As an example, Table 1 is presented with the analysis of co-occurrences of the intellectual faculties.

Table 1. Co-occurrences between components and the intellectual dimensión

Componentes	Cocurrencias
Conocimiento-inteligencia	0.50
Ciencia-investigación	0.11
Maestros-calidad	0.09
Aprendizaje de un oficio	0.06
Libros y recursos	0.03

Source: self made

With the semantic network of physical faculties, the components (a) healthy eating, (b) physical exercise, (c) healthy habits, (d) health laws and (e) manual work were identified. The first three coincide with those proposed by Freire Seoane and Salcines Cristal (2010), Reloba Martínez et al. (2016) and Riquelme Uribe et al. (2013). The manual work component is typical of Adventist educational institutions. With the table of co-occurrences of the physical faculties, it was possible to observe that healthy eating ranked first with a factor of .48, followed by healthy habits with a factor of .38, manual work with .27, physical exercise with .24, and health laws with .21.

The most important components of the spiritual (moral) faculties dimension were (a) knowledge of God, (b) reading the Bible, (c) prayer, (d) witnessing and serving, and (e) use of talents. The spiritual dimension is recognized by the World Health Organization and by different scholars such as Comenio, Pestalozzi and Bédard, among others. The components coincide with Bédard (2003), Hawks (2004), Morales-Ramón and Ojeda-Vargas (2014), Palomar Gallardo et al. (2020), Pizarro Sánchez et al. (2020) and Taylor (2014). Bible reading ranked first in the table of co-occurrences with a factor of .25. The second most important component was knowledge of God with a factor of .18, followed by prayer with .12, use of talents with .06, and witness and service with .05.

In the philosophical document of the General Conference (2001) —developed by Rasi et al.— a fourth dimension is added in the following definition: “Adventist education imparts more than an academic program, [because] it seeks the harmonious development of all faculties of the individual: spiritual, intellectual, physical and social. These dimensions will transcend to eternity” (p. 1). Knight (2002) maintains that same position, while Taylor (2014), in a similar way, presents the four dimensions explained from White (trans. 2009): “The harmonious development of all the physical, intellectual and spiritual faculties that prepares the student for the joy of serving in this world and for the higher joy of wider service in the world to come” (p. 10). The social dimension represented by a focus on service. Taylor extends that explanation with the text of Luke 2:52 (Reina-Valera, 1960): “And Jesus increased in wisdom and stature, and in favor with God and men”, again pointing to four dimensions.

In literature Durkheim (1858-1917) also considers the social dimension, as he notices a link between religion and society. He considers religion as a social relationship, so he establishes this dimension as part of educational development (Reyes et al., 2014).

For the construction of the scale, the position of the four dimensions is accepted: physical, intellectual, spiritual (moral) and social. The basis for the elaboration of the reagents for the scale of the social dimension were the following: Asociación Acreditadora Adventista (2013), Conferencia General (2001), Knight (2002), Taylor (2014) y White (trad. 2013)

Entrepreneurship model

Derived from the educational model, especially the physical faculties dimension, which —according to White includes the exercise and work components—, the entrepreneurship model is developed that coexists with the educational model and can be considered a transversal curriculum, which provides the student with a series of strategies called (a) colportage university, (b) manual work, (c) volunteer service and (d) personal endeavors.

This entrepreneurship model offers the student a range of opportunities for the development of activities that complement their academic life and that provide experiences that intentionally seek the growth of technical skills, when carrying out an internship and soft skills such as integrity, teamwork, communication skills, talent development, responsibility, social skills, leadership, among others (Díaz Quezada and Sanhueza Cartes, 2020; Espinoza Mina and Gallegos Barboza, 2020; Fuentes et al. , 2021). This entrepreneurship model also provides tools for self-financing your study program.

The entrepreneurship model in Adventist corporate universities

The entrepreneurial vocation has been present since the origins of the Adventist corporate. The pioneers (James White, Ellen White, John N. Andrews, Joseph Bates and Uriah Smith, among others) had the first business ideas by printing and distributing some publications from the year 1848. It was in Rochester in 1852 where the first publishing house with a small type press, 11 years before the legal incorporation of the Adventist corporate in 1863 (Neufeld et al., 1976).

In 1872 the corporation sponsors the first school in Battle Creek, Michigan, under the leadership of Goodloe Harper Bell. That same year, White (1872) wrote a section called The Proper Education in the monthly publication The Health Reformer, where he established the

fundamental principles on education that should seek the development of the physical, intellectual and moral faculties.

A year later, White (1873) writes the first statement that gives rise to the entrepreneurship model in Adventist educational institutions. In it he stated that schools should have establishments with agricultural and manufacturing industries, that teachers should supervise the work of students in these industries, and that a portion of each day's time should be devoted to work.

In a second statement in 1899, she wrote about the need to create industries in the college for productive purposes, to support the students and the institution. She also mentions that in Avondale, Australia, a health food factory should be established in the school, because that way parents could also find work there. This is the beginning of a model of social entrepreneurship, since these industries allow the work of parents and students, who obtain resources that help them defray the costs of their education while developing soft skills that contribute to the development of a practical life. (Moreno-Murcia and Quintero-Pulgar, 2021; Pizarro Sánchez et al., 2020; White, trans. 1991).

Next, Table 2 presents the four main axes into which entrepreneurship and entrepreneurship have been divided within the Adventist corporate:

Table 2. Adventist Corporate Entrepreneurship

Ejes	Orígenes	Estadísticas actuales
Casas editoras	En la primavera de 1846 se imprimió un informe titulado <i>Al remanente esparcido</i> . El 12 de marzo de 1852, se establece la primera oficina impresora Review and Herald.	En 2021 se cuenta con 57 casas editoras muy prósperas que publican en 342 lenguajes y dialectos alrededor del mundo (Seventh-day Adventist Church, 2021).
Instituciones de salud	En 1866 nace el Western Health Reform Institute (Instituto Occidental de la Salud). Para la época de 1890, bajo la dirección del Dr. Kellogg, el sanatorio de Battle Creek se transformó en la mayor institución de su tipo en el mundo y alcanzó renombre mundial (Knight, 2007).	Las estadísticas del <i>2021 Annual Statistical Report</i> señalan que alrededor del mundo en el año 1900 había 27 hospitales y sanatorios; 122 años después se cuenta con 229 hospitales y sanatorios, así como 1475 clínicas y dispensarios, 15 centros de retiro-asistencia a ancianos y orfanatos.
Instituciones educativas	Goodloe Harper Bell es considerado como el padre de la educación adventista. Organizó la primera escuela oficialmente patrocinada por los adventistas del Séptimo Día, en Battle Creek, Michigan, en 1872	De acuerdo con las estadísticas, se cuenta con más de 9419 instituciones para impartir educación en el mundo, discriminadas en 118 universidades, 2640 colegios de secundaria, 6623 escuelas primarias, seguidos por 38 centros de entrenamiento para el trabajo (Seventh-day Adventist Church, 2021).
Otras Industrias		22 industrias de alimentos, 241 centros de multimedia y comunicaciones, los servicios de aviación, navegación fluvial y marítima, la agencia de seguros, fondo de pensiones, la Agencia Adventista de Desarrollo y Recursos Asistenciales ADRA, etc., que hacen presencia en 212 países (Seventh-day Adventist Church, 2019).
Empleados a nivel mundial		322 120 empleados

Source: self made

Dimensions manual work, colportage university, volunteer service and personal endeavors

To build the second part of the scale, the dimensions that make up the Adventist entrepreneurship model were documented. Likewise, a text analysis was carried out with the help of the EGW Writings application in Spanish and the Atlas.ti software to detect the dimensions of manual work, university canvassing, volunteer service and personal endeavors.

Manual work is defined as a program where the student has the opportunity to develop a practical job in different companies or departments, while completing their study program. White states that a symmetrical education has a combination of book knowledge and manual work, and that there must be a time during the school program in which the students should learn some trade or occupation with which, if necessary, they could make a living (White, trans. 1928, trans. 1991, trans. 2006, trans. 2009).

Table 3 is presented below, showing the trades that have been developed in Adventist educational institutions throughout history and that have given rise to the creation of multiple companies. It is common to see in Adventist educational institutions that are also made up of food companies, carpentry shops, mini-markets, health institutions, among others, start to meet the needs of the institution and soon reach the regional and national market, and some reach the market. international.

Table 3. Manual work activities

Actividades de trabajo manual	Fuente
1. Debe darse a los estudiantes una educación práctica en la agricultura.	White, trad. 1991
2. Edificar casas.	
3. Diversas industrias deben instalarse en nuestras escuelas.	
4. La instrucción industrial debe incluir la teneduría de libros, la carpintería.	
5. Trabajos de herrería, pintura, zapatería, arte culinario, panadería, lavandería, zurcidos, dactilografía, carpintería e imprenta, debe enseñárseles a hacer vestidos y a cuidar del jardín.	
6. Deben enseñarse la encuadernación y una variedad de otros oficios, que no solo proveerán ejercicio físico, sino que impartirán conocimiento valioso.	
7. La enseñanza industrial debe incluir la contabilidad.	

Source: self made

These trades have been contextualized and updated to the needs of an automated and digital world. Figure 2 summarizes the list of companies and dependencies where the student has the opportunity to develop the manual work dimension at the University of Montemorelos.

Figure 2. Components of manual work at the University of Montemorelos

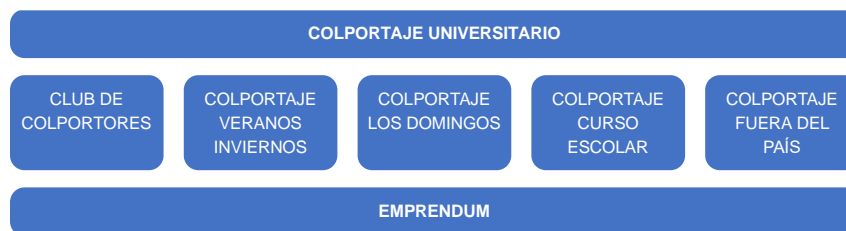


Source: self made

University colportage is defined as a self-financing program in which students develop different marketing strategies to carry out the sale of books related to the physical, emotional and spiritual health care of families. This seeks to contribute to the construction of a better society, as well as to develop technical skills, soft skills and acquire resources to finance the educational project.

The beginning of this program dates back to 1906, when at Union College in Lincoln, Nebraska, a scholarship plan was established for students who went out to canvass in the summers. If a student sold, for example, \$250 in books, the sponsoring institutions added a bonus that was enough to cover their food, room, and tuition expenses for one school year (Schwarz and Greenleaf, 2003). Figure 3 describes the modalities in which university colportage is developed at the University of Montemorelos.

Figure 3. Components of university colportage at the University of Montemorelos



Source: self made

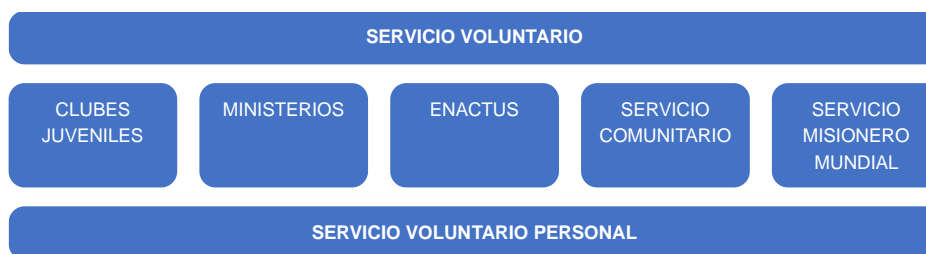
Voluntary service is defined as the kind and generous attitude of offering knowledge, time and resources to serve those most in need (Universidad de Montemorelos, 2019). This is developed through clubs, ministries, associations, Enactus, community service and cross-cultural missionary service. The main three are described below.

The Adventist Church's youth club program comprises three broad categories: Junior Youth (Adventurers: ages 6-9 and Pathfinders: ages 10-15), Senior Youth (Ambassadors and Master Guides: ages 16-21, and Young Adults: ages 22 to 30+), and public campus ministry (youth leaders ages 16 to 30+) (General Conference of Seventh-day Adventists, 2015).

Enactus (2020) is defined as the world's largest experiential learning platform dedicated to creating a better planet. It has 72,000 students from universities around the world who decide to integrate its methodology into their programs to promote entrepreneurship. Students make a diagnosis of the needs of individuals in their community, identify possible solutions to problems and implement social entrepreneurship projects with an impact on society.

Community service is a space of time and place where the student exercises leadership in the noblest causes in their environment. It has three phases: analysis of social problems, elaboration of the social diagnosis and design and implementation of the project (Universidad de Montemorelos, 2019). Figure 4 mentions the strategies that are developed in favor of students and the community.

Figure 4. Components of volunteer service at Montemorelos University



Source: self made

Personal ventures are defined as a commercial activity carried out by students in order to raise resources for the self-financing of expenses related to their university studies. The University of Montemorelos promotes personal entrepreneurship from subjects in the area of entrepreneurship. The objective of these is to begin a process—from the idea to the initial proposal of a business plan—that ends with the commercialization of the products at the entrepreneurship fair and, in some cases, with the start-up of the business.

These enterprises are developed in a model with three faces: the first (entrepreneur) represents the individual with their needs and motivations, beliefs, behavior, knowledge and cultural values; the second (the environment) can be positive or negative, and includes external environments and market players, and the third (entrepreneurial action) is presented when carrying out an innovation applicable not only to the creation of a company, but also to the management within a business (Méndez Salvatorio, 2012; Osorio Tinoco y Pereira Laverde, 2011; Varela Villegas, 2008).

Purpose of the study

In the universities that belong to the Adventist corporate, an educational model and an entrepreneurial model are developed that coexist in their comprehensive education proposal. Constructing a valid and reliable scale for the participation construct in both models is the main objective of this research, which will allow the collection of useful information for decision making.

Participants

The population considered for this research consisted of 2672 graduates of the last 10 years and final year students from the University of Montemorelos. To determine the sample size, the following calculation was performed: $n = ?$, $N = 2,672$ personas, $Z = 1.96$, $P = 0.5$, $Q = 0.5$, $E = 0.05$.

$$n = \frac{Z^2 P Q N}{(N - 1) E^2 + Z^2 P Q}$$

$$n = \frac{1.96^2 (0.5)(0.5)(2,672)}{(2,672 - 1)(0.05)^2 + 1.96^2 (0.5)(0.5)}$$

$n = 336$ encuestas

The real sample was 345 subjects, which represents 12.9% of the population and the procedure for data collection followed two stages: in the first, 50% ($n = 1196$) of the graduates of the last 10 years were randomly selected, based on information provided by the alumni department. He sent them the link of the instrument developed in Questionpro, which had a response rate of 16.1%. In the second stage, the students of the last undergraduate degree were administered the physical instrument in the classrooms.

The surveyed sample is described with the following characteristics: 51.4% corresponds to the male sex, most of them single (70.2%) and under 36 years old (88.2%). While studying, 55.3% lived in university dormitories. At the time of being surveyed, more than half were students (53.4%), 14.6% were employed by the Adventist Church, 17.4% worked in the public and private sectors, and 10.7% were self-employed.

Instrument

For the measurement, an instrument was built with the dimensions specified above. A set of items was created for each dimension that were subjected to the relevance and clarity test, evaluated by eight experts who used a scale from one to five: four doctors in education, three doctors in theology and one doctor in research. The questions evaluated with a mean lower than 3.8 were discarded due to low relevance and clarity; Modifications were made to the rest and a pilot test was run with 150 second and third year undergraduate students at the University of Montemorelos. Based on Cronbach's alpha and a factorial analysis, some final modifications were incorporated.

Originally, the instrument had 48 items: six for the intellectual dimension, eight for the spiritual, six for the social, and six for the physical dimension of the educational model, which were answered on a Likert scale from completely disagree (1) to completely agree (5). The entrepreneurship model included six items in the manual work dimension, five in colportage university, eight for voluntary service and three for personal endeavors, which are answered with a score scale from never (1) to always (5).

Process

The procedure proposed by Palomar Gallardo et al. (2020) to cover the analysis objectives set in the study, which consisted in carrying out the following steps: with the statistical software IBM SPSS Statistics 25, a reliability analysis was carried out, which was approached through the calculation of the alpha coefficients of Cronbach and an exploratory factorial analysis (using as extraction method by main components with Varimax rotation), which allowed us to observe the different factorial structures of the items. Finally, the AMOS 25 software was used for the confirmatory analysis with structural equations, as well as the correlation between the dimensions of the model.

Results

The administered measurement instrument was reduced to 31 of the original 48 items. That is, those with a communality of less than .5 were eliminated, since —according to Hair et al. (2010)—are lacking in explanation that contributed little to factorial identification. Table 4 shows the number of items per dimension and those that were eliminated. The detailed description of the 48 items can be seen in the annex.

Table 4. Identification of items by dimension

Dimensión	Códigos de ítems	Cantidad de ítems	Ítems eliminados	
Modelo educativo				
1	Intelectual	MEINT1, MEINT3, MEINT4, MEINT5	4	MEINT2 y 6
2	Espiritual	MEESP7, MEESP8, MEESP10, MEESP11	4	MEESP 9, 12,13,14
3	Social	MESOC15, MESOC16, MESOC17, MESOC20	4	MESOC 18 Y 19
4	Física	MEFIS23, MEFIS24, MEFIS25, MEFIS26	4	MEFIS 21 Y 22
Modelo de emprendimiento				
5	Trabajo manual	MEMTM1, MEMTM2, MEMTM3, MEMTM4	4	MEMTM 5 Y 6
6	Colportaje	MEMCU7, MEMCU8, MEMCU9, MEMCU10	4	MEMCU 11
7	Servicio voluntario	MEMSV12, MEMSV14, MEMSV15, MEMSV16	4	MEMSV 13
8	Emprendimientos personales	MEMEP20, MEMEP21, MEMEP22	3	MEMEP 17,18, 19

Source: self made

To determine construct validity, factorial analysis was used (KMO = .878, Bartlett's sphericity significant with $p < .001$). It was necessary to do an orthogonal rotation (Varimax) to clearly identify the factors with the corresponding statements. The total variance explained by the eight rotated factors was 69.02% and the reliability was .875, according to Cronbach's alpha.

Table 5 shows the factors with the factor loadings corresponding to the associated statements. According to the results obtained in the grouping of the items with their factorial load, it can be pointed out that 30 of the 31 statements were grouped with factorial loads greater than .3, in the eight factors proposed from the literature review. This indicates a high level of validity, since the subjects associate the contents of the statements in each factor.

The only item that does not have a significant factorial load belongs to the educational model: "MEDS20. In the bedrooms or other places of residence I had the opportunity to develop habits of cleanliness and order. Its load on the corresponding factor was .289, close to the minimum acceptable value ($\lambda = .3$), but it also had significant loads on the spiritual ($\lambda = .474$) and physical ($\lambda = .420$) development factors. In fact, the MEDS15 and MEDS17 items of the same dimension of social development show important loads in the factors of spiritual and physical development. This could indicate the need to define this dimension

more clearly or accept the fact that the social dimension is made up of the interaction of the other dimensions: physical, mental and spiritual. For statistical analysis, the social dimension factor was included.

The manual work factor (MT) grouped the items related to the work done while studying in the departments or companies of the institution, periods and daily hours dedicated, or even participation in the institutional work-scholarship program.

The university colporteur factor (CU) assessed the student's participation in the training and as a colporteur at different times, whether in winter, summer or even on Sundays of each week.

The voluntary service factor (SV) focused on the level of participation in unpaid activities, but organized by the institution. It includes participating as a director, administrator or collaborator in an association, club or ministry.

The personal entrepreneurship (PE) factor included the creation or participation in private companies, whether personal, of a family member or friend, to obtain economic resources and pay for their tuition.

The spiritual development factor (ESP) indicated the perception regarding the extent to which the environment, church and institutional activities helped to consolidate their faith and importance for their life.

The physical development factor (FIS) assessed the extent to which the infrastructure, services and campus, as well as lifestyle programs, provided the opportunity to become physically stronger and form healthy habits.

The intellectual development factor (INT) considered the aspects of the quality standards of the teachers, the curriculum, the opportunities to learn to investigate and the availability of academic resources.

The social development factor (SOC) had to do with establishing positive relationships with teachers and with other students, as well as receiving guidance on marriage and its development of cleanliness and order habits.

Table 5 also shows the reliability indices, which are acceptable, and the descriptive statistics of the items. It is important to point out that the items related to the educational model have a higher mean than the items of the entrepreneurship model, perhaps because participation in the educational model is mandatory and many of the activities of the entrepreneurship model are voluntary.

Table 5. Statistical and factorial loadings of the statements after an orthogonal rotation

Ítems	Factores								M	DS
	TM	CU	ESP	FIS	SV	INT	EP	SOC		
MEMTM3	.914	.152	.084	.024	.073	-.016	.014	.028	3.31	1.573
MEMTM2	.910	.178	.020	.021	.056	.011	.064	.005	3.32	1.578
MEMTM1	.906	.175	.045	.040	.038	-.001	-.012	.012	3.46	1.502
MEMTM4	.859	.093	.128	-.010	.015	.003	.037	.029	3.12	1.651
MEMCU9	.154	.903	.130	.098	.083	.034	.022	.008	2.02	1.402
MEMCU8	.156	.889	.117	.016	.085	.038	.050	.029	2.00	1.481
MEMCU7	.166	.874	.123	.077	.130	.041	-.049	.012	2.30	1.529
MEMCU10	.142	.798	-.015	.093	.169	.076	.006	.068	1.81	1.174
MEESP7	.107	.027	.774	.201	.059	.239	.025	.095	4.15	0.980
MEESP11	.026	.118	.752	.072	.080	.236	.015	.041	4.41	0.899
MEESP10	.124	.104	.726	.229	.080	.169	.038	.144	4.25	0.878
MEESP8	.100	.071	.647	.259	.177	.216	.014	.213	4.36	0.781
MESOC20	.052	.134	.474	.420	.167	-.088	.024	.289	4.04	1.068
MEFIS25	-.012	.089	.144	.843	.025	.127	-.012	.091	3.80	1.128
MEFIS24	.031	.059	.167	.737	.118	.240	.030	.245	4.01	1.094
MEFIS26	.015	.082	.324	.646	.002	.262	.024	.036	3.86	1.066
MEFIS23.	.039	.024	.181	.615	.014	.299	-.012	.168	4.25	0.884
MEMSV16	.015	.127	.070	.111	.830	.064	.166	.007	2.05	1.354
MEMSV14	.086	.160	-.032	-.058	.754	.112	.025	.211	2.21	1.411
MEMSV15	.026	.043	.137	-.015	.704	-.042	.050	.120	1.93	1.245
MEMSV12	.065	.161	.256	.215	.673	.002	.019	-.248	2.74	1.561
MEINT4	.008	.021	.250	.065	.024	.732	.028	.103	4.08	0.946
MEINT1	-.044	.091	.198	.318	-.026	.674	.079	.044	3.90	0.909
MEINT5	.022	.034	.030	.235	.204	.674	-.036	.238	3.89	1.004
MEINT3	-.008	.063	.347	.225	-.055	.659	.014	.005	3.84	0.962
MEMEP20	.041	-.075	-.045	.058	.145	.005	.816	.011	2.08	1.477
MEMEP21	-.097	-.098	.100	-.004	.081	.056	.796	.043	2.01	1.424
MEMEP22	.157	.227	.004	-.033	-.004	.001	.712	.078	2.64	1.545
MESOC16	.066	-.059	.191	.241	.020	.257	.054	.725	4.25	0.863
MESOC15	-.039	.049	.453	.197	.127	.199	-.060	.594	4.46	0.731
MESOC17	.030	.157	.376	.386	.162	.016	.009	.494	3.72	1.077
A	.935	.920	.843	.816	.767	.765	.680	.743		

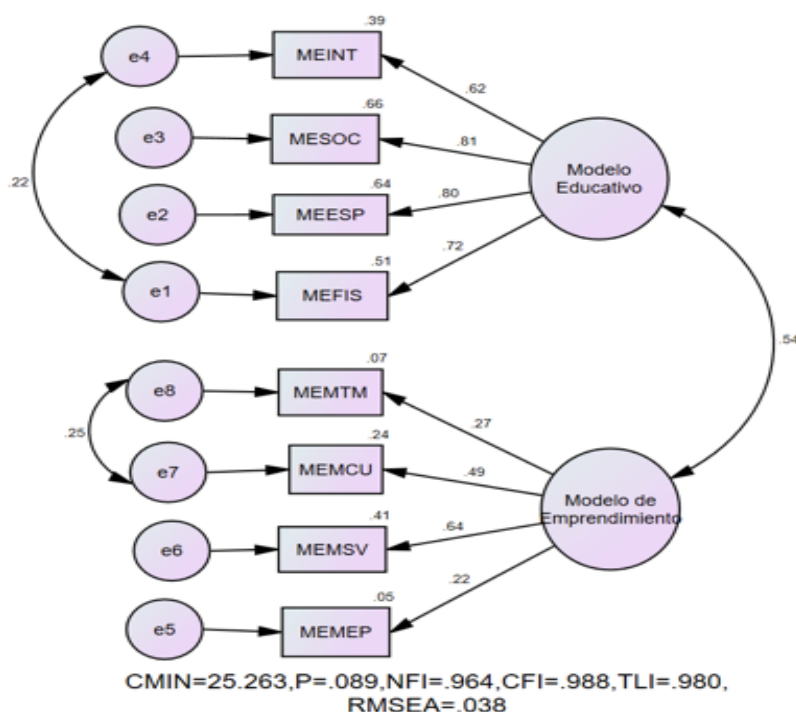
Note: MT = manual work; CU = university colportage; ESP = spiritual development; FIS = physical development; SV = volunteer service; INT = intellectual development; EP = personal ventures; SOC = social development. The first letters in the item codes are interpreted as educational model (ME) and entrepreneurship model (MEM).

Source: self made

To assess the association between participation in educational and entrepreneurial models, structural equation analysis was used (see Figure 5). According to Escobedo Portillo et al. (2016) and Westland (2019), some of the criteria to determine the fit of a model in this analysis are the absolute fit determined by the non-significance of chi-square ($p > .05$), values for CFI, NFI and TLI greater than .90 and RMSEA less than .05. The model reached a chi-square level of significance ($p = .089$) higher than the one proposed and meets the absolute goodness-of-fit criterion.

The model meets the criteria proposed by Escobedo Portillo et al. (2016) and Westland (2019) in the indicators used (CFI = .988, NFI = .964, TLI = .980, RMSEA = .038). This confirms the fit of the association model between participation in the educational model and the entrepreneurship model with its eight factors. The resulting correlation between participation in the educational model and participation in the entrepreneurship model was .54. Regarding the contribution of the dimensions to their respective constructs (see Figure 5), it was observed that the greatest contribution is presented in the social dimension with .81 and the spiritual dimension with .80. For the entrepreneurship model, the highest contribution is found in voluntary service with .64.

Figure 5. Confirmatory model for the association between participation in the educational model and in the entrepreneurship model



Source: self made

Discussion

The Adventist educational model with its entrepreneurship model presents a comprehensive education proposal that has been implemented through activities that lead to the harmonious development of the four dimensions that —according to the confirmatory model in AMOS— have the following score: intellectuals ($\lambda = .62$), spiritual ($\lambda = .80$), physical ($\lambda = .72$) and social ($\lambda = .81$), together with the dimensions of the entrepreneurship model that have a manual work score ($\lambda = .27$), colportage university ($\lambda = .49$), volunteer service ($\lambda = .64$) and personal endeavors ($\lambda = .22$).

These results contrast with those found by Palomares and Chisvert (2014), who present a study of the public universities of the Valencian community, where they analyze social entrepreneurship based on activities that promote the moral dimension (character development), the social dimension that seeks community development and the intellectual dimension that analyzes the capacity for universalization (technical-intellectual), with λ coefficients from .48 to .89. This training focuses on intellectual skills and gives less importance to social ($.10 < \lambda < .48$) and moral ($0.05 < \lambda < 0.10$) skills. This reproduces the business training program whose purpose is the development of projects in which emphasis is placed on the productive and economic aspects where hostility to the moral and social approach is revealed. They conclude that they do not present a comprehensive education approach.

Complementary to the development of the intellectual, spiritual and social dimensions, the Adventist educational model with its entrepreneurship model favors the development of physical faculties from two main perspectives: body care through a healthy lifestyle and physical exercise through from work.

The first perspective emphasizes a healthy diet, healthy habits and moderate physical exercise. Regarding exercise, several authors (Fortuño-Godes, 2017; Reigal et al., 2016; Reloba Martínez et al., 2016; Riquelme Uribe et al., 2013) agree that moderate physical activity has a positive correlation with the variables of cognitive functioning. According to them, with exercise several regions of the brain are stimulated and there is an improvement in memory, processing speed and selective attention.

The second complementary perspective, that is, physical exercise through work, has a social objective in Adventist universities. As mentioned above, the entrepreneurship model

has four dimensions: manual work, colportage at the university, personal endeavors and voluntary service, with its foundation in White (1873) when he advised that schools should have establishments with agricultural industries and manufacturing and that teachers should supervise student work in those industries. In 1899, this author added that healthy food factories should be created in educational institutions where parents could work to obtain resources to finance their children's studies.

For this reason, Adventist universities intentionally develop three dimensions: manual work, university literature, and personal endeavors that offer the student the possibility of partially or totally defraying the investment in their university program.

Manual work usually includes scholarship service, work in companies and in departments of institutions. University canvassing, as already said, is a process of selling books related to health care and family. In personal endeavors, students develop different self-generating income business proposals within the framework of the institutional philosophy.

This model of entrepreneurship not only helps the student to pay for their university studies and improve their quality of life in general, but has also allowed the development of multiple companies within the Adventist corporate, and abroad, with the generation of new ventures by part of the students and graduates. With this model, many young people have been helped to get out of poverty and have a positive impact on their social circle. These results agree with Tingey et al. (2020), who report an intervention carried out with the Arrowhead Business Group (ABG) methodology, which was proposed by the winners of the 2019 Nobel Prize in Economic Sciences (Abhijit Banerjee, Esther Duflo and Michael Kremer) on entrepreneurship education. culturally based youth campaign that is conducted to collect evidence on how to reduce poverty. Their results show that the practice of business entrepreneurship has produced positive impacts in low-income contexts.

The three dimensions also give the possibility of applying the concepts acquired in the classroom in business practice. In this way, a scenario is generated where students develop meaningful learning. This is based on White (trans. 2014) when he states that companies should be established in educational institutions where young people can learn different trades and thus exercise both their muscles and their intellectual faculties. This strategy of business practices is a concept that has an impact on curricular development, the semesters destined for practices in work environments, social service and other figures used in higher education institutions. Organizations such as the Consejo para la Acreditación de

la Educación Superior A. C. (COPAES, 2022) and allied accrediting agencies have the internship requirement as part of their requirements because they maintain that it helps the employability of young people and achieve academic excellence.

Regarding the fourth dimension, volunteer service in the application of educational and entrepreneurial models in Adventist universities, different opportunities for its development are promoted. In the present study, volunteer service is the factor of the entrepreneurship model that contributes the most to the development of a comprehensive education ($\lambda = .64$). Tshikovhi and Shambare (2015) also analyze volunteer service activities through the experiences of students who belong to the platform program for university entrepreneurs with a social vision (Enactus). Their results clearly demonstrate that personal attitudes have the strongest relationship with entrepreneurial intentions ($r = .624$). These authors conclude that voluntary service provides its members with possibilities to apply the knowledge of their careers to the service of others, as well as to develop greater soft skills related to the execution of their entrepreneurial activities.

Educational and entrepreneurial models favor the development of soft skills. The structural equation model shows the high score for the social ($\lambda = .81$) and spiritual ($\lambda = .80$) dimensions. In this sense, Tseng et al. (2019) and Keng Ng (2020), who have conducted studies on soft skills in business and nursing school students, call on curriculum developers and policy makers to bring about institutional changes so that students can go further. beyond the development of conceptual and technical skills, by integrating activities into their curricular processes that allow students to have an orientation at the service of their peers.

Conclusions

The first common thread of this article was the process of creating and validating a scale that included the use of Atlas.ti (a software for qualitative analysis) in the literature review process to identify the main components that serve as the foundation. for the preparation of reagents. Subsequently, the content validity was performed by expert judgment, the pilot test, the Cronbach analysis, the factorial analysis and finally the confirmatory analysis in AMOS with the structural equations to obtain the association model and the goodness of fit indices. In the case of this scale applied at the University of Montemorelos, the following indicators are shown: Cronbach's alpha = .875, KMO = .878, the factor analysis that groups the vast majority of items (97%) according to theory and the

goodness of fit indices ($\chi^2= 25.263$ $p = .089$, CFI = .988, TLI = .980, NFI = .964, RMSEA = 0.38) considered acceptable.

The second shows the comprehensive education proposal with the educational and entrepreneurial models developed in more than 100 Adventist Corporate universities worldwide for a period of almost 150 years. In these institutions, curricular programs have been designed in different areas and, in parallel, related companies have been created or within the university cloisters. Likewise, voluntary service programs have been developed to benefit those most in need as an intentional strategy to provide experiences that seek the harmonious cultivation of the physical, intellectual, moral and social faculties of the students. For the specific case of the University of Montemorelos, the results of the AMOS are presented, where the intellectual faculties ($\lambda = .62$), spiritual ($\lambda = .80$), physical ($\lambda = .72$) and social ($\lambda = .81$) define their educational model in a balanced way. This is relevant because there is empirical evidence that in practice the philosophical premises that govern the institution are met.

Future lines of research

Comprehensive education is a topic of vital importance in the training processes of professionals who must be prepared to face the challenges that arise today. For this reason, the information obtained with the application of the measurement scale presented in this research becomes an input to be analyzed with a model of structural equations whose results allow visualizing the diagnosis of educational and entrepreneurial models. Based on this information, the educational institution can identify strengths and areas of opportunity. It is understood that the scale was built for a specific educational and entrepreneurial model, although it can be adapted to different contexts.

One aspect that suggests another line of research is the dimension of social development, since some items show important loads in the factors of spiritual and physical development. This could show the need to define this dimension more clearly or accept the fact that the social dimension is made up of the interaction of the other dimensions: physical, mental and spiritual.

References

- Arias Barranco, I. M. (2015). *Diseño y validación de un cuestionario de escala formativa para valorar las competencias transversales de estudiantes universitarios: una propuesta para dispositivos móviles basada en Android* (tesis doctoral). Universitat Rovira I Virgili, Tarragona, España.
- Asociación Acreditadora Adventista (2013). *Manual de acreditación*. <https://education.adventist.org/wp-content/uploads/2018/04/AAA-Handbook-2013-Spanish-Complete.pdf>
- Bédard, R. (2003). Los fundamentos del pensamiento y las prácticas administrativas. El rombo y las cuatro dimensiones filosóficas. *AD-MINIS TER Universidad EAFIT*, 3, 68-88.
- Ciprés, I. (2009). La vigencia de Juan Amós Comenio en el pensamiento educativo actual. *Fuentes Humanísticas*, 21(39), 113-128.
- Comenius, J. A. (2012). *Didáctica magna*. Porrúa.
- Conferencia General de los Adventistas del Séptimo Día (2001). Documento de la filosofía de la educación adventista-GC Policy 2003. <https://education.adventist.org/wp-content/uploads/A-Statement-of-Seventh-day-Adventist-Educational-Philosophy-2001-Spanish.pdf>
- Consejo para la Acreditación de la Educación Superior A. C. (COPAES) (2022). *Marco general de referencia para los procesos de acreditación de programas académicos de tipo superior*. https://www.copaes.org/documentos/Marco_de_Referencia_V_3.0_0.pdf
- Cortés Oliver, M. P. (2017). *La propuesta educativa de María Montessori: reflexiones pedagógicas sobre su vigencia y diferencias en la práctica educativa entre la casa de los niños y el taller* (tesis de licenciatura). Universidad Nacional Autónoma de México, Ciudad de México, México.
- Delors, J. (1994). Los cuatro pilares de la educación. *La educación encierra un tesoro. El correo de la UNESCO*, 1-9.
- Díaz Quezada, V. y Sanhueza Cartes, C. (2020). Elaboración y validación de un instrumento evaluativo para monitorear la adquisición de competencias blandas en estudiantes de pregrado. *Revista Paradigma*, 41, 812-836. <https://doi.org/10.37618/paradigma.1011-2251.2020.p812-836.id932>

- Enactus (2020). *Enactus World Races*. <https://enactus.org/who-we-are/our-story/>
- Escobedo Portillo, M. T., Hernández Gómez, J. A., Estebané Ortega, V. y Martínez Moreno, G. (2016). Modelos de ecuaciones estructurales: características, fases, construcción, aplicación y resultados. *Ciencia & Trabajo*, 18(55), 16-22. <https://doi.org/10.4067/S0718-24492016000100004>
- Espinoza Mina, M. A., y Gallegos Barboza, D. del P. (2020). Habilidades blandas y su importancia de aplicación en el entorno laboral: perspectiva de alumnos de una universidad privada en Ecuador. *Revista Espacios*, 41(23), 109–120.
- Fortuño-Godes, J. (2017). Relación entre ejercicio físico y procesos cognitivos en las personas mayores. *Ágora para la Educación Física y el Deporte*, 19(1), 73-87. <https://doi.org/10.24197/aefd.1.2017.73-87>
- Freire Seoane, M. J. y Salcines Cristal, J. V. (2010). Análisis de las competencias profesionales de los titulados universitarios españoles. La visión de los egresados. *Perfiles Educativos*, 32(130), 103-120. <https://doi.org/10.22201/iisue.24486167e.2010.130.20625>
- Fuentes, G., Moreno-Murcia, L. M., Rincón-Tellez, D. C. y Silva-García, M. B. (2021). Evaluación de las habilidades blandas en la educación superior. *Formación Universitaria*, 14(4), 49–60. <https://doi.org/10.4067/S0718-50062021000400049>
- General Conference of Seventh-Day Adventists. (2015). *Manual de la iglesia*. APIA. https://itepeyac.interamerica.org/uploaded_assets/166298
- Gutiérrez Ramírez, M. G. (1988). *La concepción del aprendizaje en el Emilio de Juan Jacobo Rousseau* (tesis de licenciatura). Universidad Nacional Autónoma de México, Ciudad de México, México.
- Hair, J. F., Anderson, R. E., Tatham, R. L. y Black, W. C. (2010). *Análisis multivariante* (5.^a ed.). Prentice-Hall.
- Hawks, S. (2004). Spiritual Wellness, Holistic Health, and the Practice of Health Education. *American Journal of Health Education*, 35(1), 11–18. <https://doi.org/10.1080/19325037.2004.10603599>
- Hernández Conesa, J. y Maldonado Suárez, E. (2014). La idea educativa y sanitaria de Juan Luis Vives: un estudio gadameriano. *Cultura de los Cuidados Revista de Enfermería y Humanidades*, 18(38), 77-91. <http://dx.doi.org/10.7184/cuid.2014.38.11>

- Horlacher, R. y Parra León, G. A. (2019). Educación vocacional y liberal en la teoría de la educación de Pestalozzi. *Pedagogía y Saberes*, (50), 121-132. <https://doi.org/10.17227/pys.num50-9505>
- Keng Ng, L. (2020). The perceived importance of soft (service) skills in nursing care: A research study. *Nurse Education Today*, 85. doi:10.1016/j.nedt.2019.104302
- Knight, G. R. (2002). *Filosofía y educación: una introducción a la perspectiva cristiana*. APIA.
- Knight, G. R. (2007). *Nuestra iglesia: momentos históricos decisivos*. APIA.
- Lombana, J., Cabeza, L., Castrillón, J. y Zapata, Á. (2014). Formación en competencias gerenciales. Una mirada desde los fundamentos filosóficos de la administración. *Estudios Gerenciales*, 30(132), 301-313. <https://doi.org/10.1016/j.estger.2014.01.017>
- Magalhães do Nascimento, E. M. (2017). La filosofía realista y naturalista de John Dewey: contribuciones para una epistemología en la actualidad. *Cuadernos de Filosofía Latinoamericana*, 38(116), 139-165.
- Méndez Salvatorio, A. (2012). *Características de personalidad e inteligencia asociadas a los emprendedores en una institución de educación superior* (tesis doctoral). Universidad Nacional Autónoma de México, Ciudad de México, México.
- Morales-Ramón, F. y Ojeda-Vargas, M. G. (2014). El cuidado espiritual como una oportunidad de cuidado y trascendencia en la atención de enfermería. *Salud en Tabasco*, 20(3), 94-97.
- Moreno-Murcia, L. M. y Quintero-Pulgar, Y. A. (2021). Relación entre la formación disciplinar y el ciclo profesional en el desarrollo de las habilidades blandas. *Formación Universitaria*, 14(3), 65-74. <https://doi.org/10.4067/S0718-50062021000300065>
- Neufeld, D. F., Neuffer, J., Cottrell, R., Mansell, D. E. y Selivanoff, G. A. (eds.). (1976). *Seventh-Day Adventist Encyclopedia* (Revised). Review and Herald Publishing Association.
- Osorio Tinoco, F. F. y Pereira Laverde, F. (2011). Hacia un modelo de educación para el emprendimiento: una mirada desde la teoría social cognitiva. *Cuadernos de Administración*, 24(43), 13-33.
- Palomar Gallardo, M. C., Romero Palomar, M., Pérez García, E. y Romero Palomar, M. I. (2020). Educar para la vida y la muerte a los estudiantes de Enfermería: “Del miedo

- al amor". *Enfermería: Cuidados Humanizados*, 9(1), 63-79.
<https://doi.org/10.22235/ech.v9i1.2167>
- Palomares Montero, D. y Chisvert Tarazona, M. J. (2014). Ética y empresa en el espacio universitario: el emprendimiento social en las universidades públicas como vehículo facilitador de la equidad social. *Revista de Docencia Universitaria*, 12(2), 205-230.
<https://doi.org/10.4995/redu.2014.5647>
- Pizarro Sánchez, R., Pinto Guevara, A. y Clark Lazcano, Cons. S. (2020). Habilidades blandas, alumnos, pedagogías. Universidad de Playa Ancha de Ciencias de la Educación (UPLACED) 2018. *Revista Q*, 11(22), 211-227.
- Reigal, R. E., Borrego, J. L. y Juárez, R. (2016). Práctica física regular y funcionamiento cognitivo en una muestra adolescente. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte*, 11(2), 201-209.
- Reloba, S., Chiroso, L. J. y Reigal, R. E. (2016). Relación entre actividad física, procesos cognitivos y rendimiento académico de escolares: revisión de la literatura actual. *Revista Andaluza de Medicina del Deporte*, 9(4), 166-172.
<https://doi.org/10.1016/j.ramd.2015.05.008>
- Reyes Morris, V. A. y Esguerra Pardo, N. B. (2014). Conversatorio sobre Las formas elementales de la vida religiosa (1912) de Émile Durkheim. *Revista Colombiana de Sociología*, 37(1), 221-237.
- Riquelme-Urbe, D. (2013). Ejercicio físico y su influencia en los procesos cognitivos. *Revista Motricidad y Persona: Serie de Estudios*, 13, 69-74.
- Runge Peña, A. K. (2012). El pensamiento pedagógico y didáctico de Juan Amós Comenio: su papel en la pansofía triádica. *Pedagogía y Saberes*, (36), 93-107.
- Salas Madriz, F. E. S., Rapalo, R. y Gil Cantero, F. (2011). *Fundamentos y desarrollo del pensamiento en educación*. Ediciones Universidad de Salamanca.
- Sánchez Márquez, M. (2009). *Juan Luis Vives, sus aportaciones a la pedagogía* (tesis de licenciatura). Universidad Nacional Autónoma de México, Ciudad de México, México.
- Seventh-day Adventist Church (SDAC) (2019). *ASTR Annual Statistical Report 2019* (vol. 1). Seventh-day Adventist Church.
<https://documents.adventistarchives.org/Statistics/ASR/ASR2019A.pdf>
- Seventh-day Adventist Church (SDAC) (2021). *Seventh-day Adventist World Church Statistics 2021*. Seventh-day Adventist Church.

- <https://www.adventist.org/statistics/seventh-day-adventist-world-church-statistics-2021/?searchsite=gc.adventist.org&ref=on-site-search&searchterm=STATIST>
- Soëtard, M. (2011). Pestalozzi, Johann Heinrich (1746-1827). *Grandes de la Educación. Padres y Maestros*, (338).
- Taylor, J. W. (2014). *Esenciales curriculares de la Educación Adventista*. https://2014.interamerica.org/uploaded_assets/150273-Taylor_Esenciales_Curriculares_Educacion_Adventista.pdf?thumbnail=original&1441088990
- Tingey, L., Larzelere, F., Goklish, N., Rosenstock, S., Jennings Mayo-Wilson, L., Pablo, E. and Barlow, A. (2020). Entrepreneurial, economic, and social well-being outcomes from an RCT of a youth entrepreneurship education intervention among native american adolescents. *International Journal of Environmental Research and Public Health*, 1(7), 1-18. <https://doi.org/10.3390/ijerph17072383>
- Tseng, H., Yi, X. and Yeh, H.-T. (2019). Learning-related soft skills among online business students in higher education: Grade level and managerial role differences in self-regulation, motivation, and social skill. *Computers in Human Behavior*, 95, 179–186. <https://doi.org/10.1016/j.chb.2018.11.035>
- Tshikovhi, N. and Shambare, R. (2015). Entrepreneurial knowledge, personal attitudes, and entrepreneurship intentions among South African Enactus students. *Problems and Perspectives in Management*, 13(1).
- Universidad de Montemorelos (2019). *Plan de curso materia: servicio comunitario*. Universidad de Montemorelos.
- Varela Villegas, R. (2008). *Innovación empresarial. Arte y ciencia en la creación de empresas* (3.^a ed.). Pearson.
- Westland, J. C. (2019). *Structural equation models: from paths to networks* (2th ed.). Springer. <https://doi.org/10.1007/978-3-319-16507-3>
- White, E. G. (1872). *The proper education*. EGW Writings. <https://egwwritings.org/read?panels=p504.650&index=0>
- White, E. G. (1873). Proper education. *The Health Reformer*, 8(4), 97-128.
- White, E. G. (trad. 1928). *La educación cristiana*. ACES.
- White, E. G. (trad. 1991). *Consejo para los maestros*. ACES.
- White, E. G. (trad. 2006). *Consejos sobre el régimen alimenticio: compilación de escritos sobre este tema*. Miami, FL: APIA.

White, E. G. (trad. 2009). *La educación* (2.^a ed.). APIA.

White, E. G. (trad. 2013). *El hogar cristiano* (2.^a ed.). ACES.

White, E. G. (trad. 2014). *Conducción del niño*. ACES.

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ANEXO

Anexo 1. Escala original modelo educativo y modelo de emprendimiento

Figura 6. Escala modelo educativo

**UNIVERSIDAD DE MONTEMORELOS
DOCTORADO EN ADMINISTRACIÓN DE NEGOCIOS**

A continuación, encontrarás un conjunto de enunciados relacionados con la evaluación del modelo educativo, modelo de emprendimiento. Frente a cada enunciado presentamos cinco opciones para que por favor los valores de acuerdo a cada una de las escalas propuestas. No existen respuestas correctas, te agradecemos contestar todos los enunciados marcando la respuesta que consideres como tu mejor opción.

MODELO EDUCATIVO

1	2	3	4	5
Totalmente en desacuerdo	En desacuerdo	Neutral	De acuerdo	Totalmente de acuerdo

Mientras estuve en la UM considero que...		1	2	3	4	5
1	MEINT1 El plan de estudios de mi carrera me ayudó a ser académicamente competente.					
2*	MEINT2 Los contenidos de las materias de mi carrera me prepararon para mi vida laboral.					
3	MEINT3 Mis profesores tenían estándares de calidad para hacer su trabajo.					
4	MEINT4 La institución me brindó facilidades para el uso de libros, revistas, materiales audiovisuales y recursos electrónicos, que me permitieron un mayor desarrollo intelectual.					
5	MEINT5 Tuve la oportunidad de participar en actividades que me ayudaron a aprender a investigar.					
6*	MEINT6 Tuve la oportunidad de aprender otros idiomas, música, arte, etc.					
7	MEESP7 El ambiente y las actividades me ayudaron a consolidar mi fe en Jesucristo como Salvador personal.					
8	MEESP7 Tuve la oportunidad de participar en actividades con énfasis en las creencias de la Iglesia Adventista.					
9*	MEESP7 Tuve la oportunidad de usar mis talentos en las actividades de la iglesia.					
10	MEESP7 Actividades como retiros espirituales, las matutinas, semanas de oración, horas del poder y otras, contribuyeron al desarrollo de mi vida espiritual.					
11	MEESP7 Comprendí que el conocimiento de Dios es el fundamento de toda verdadera educación y de todo servicio verdadero.					
12*	MEESP7 Los docentes, en sus materias, realizaban actividades de integración de la fe aplicados a su disciplina.					
13*	MEESP7 En las materias se enfatizaron los principios y valores bíblicos.					
14*	MEESP7 Tuve la oportunidad de participar en actividades de testimonio y servicio misionero.					
15	MESOC15 Tuve la posibilidad de desarrollar relaciones sociales positivas con otros estudiantes.					
16	MESOC16 Tuve la posibilidad de desarrollar relaciones sociales positivas con miembros del personal docente.					
17	MESOC17 Tuve la oportunidad de participar en actividades que me permitieron prepararme para el matrimonio y la vida familiar.					
18*	MESOC18 Se me brindó la posibilidad de convivir con otras personas en eventos culturales, de recreación, clubes y otros.					
19*	MESOC19 Tuve la oportunidad de aprender a convivir dentro de una comunidad culturalmente diversa.					
20	MESOC20 En los dormitorios u otros lugares de residencia tuve la oportunidad de desarrollar hábitos de laboriosidad, aseo y orden.					
21*	MEFIS21 Aproveché las oportunidades de autofinanciamiento a través del trabajo manual, el colportaje, emprendimientos personales, etc.					
22*	MEFIS22 Tuve la posibilidad de realizar un oficio alternativo a mi profesión, como carpintería, panadería, costura, herrería, finca u otro.					
23	MEFIS23 Se me brindaron diversas oportunidades para hacer ejercicio físico.					
24	MEFIS24 La institución me permitió experimentar una dieta saludable a través de los servicios de alimentación de la universidad, como el comedor, el snack y otros.					
25	MEFIS25 Participé de un estilo de vida saludable con la aplicación de los ocho remedios naturales (descanso, temperancia, agua, etc.).					
26	MEFIS26 La infraestructura, el ambiente natural y los servicios del campus me permitieron un desarrollo integral.					

Source: self made

Figura 7. Escala modelo de emprendimiento

MODELO DE EMPRENDIMIENTO									
1	2	3	4	5					
Nunca	Casi nunca	Algunas veces	Casi siempre	Siempre					
Durante mis años de estudio en la UM participé de...					1	2	3	4	5
1	MEMTM1 Trabajo en alguno de los departamentos de servicio o empresas en la UM.								
2	MEMTM2 Jornadas de trabajo de 4 o más horas, en los departamentos o empresas.								
3	MEMTM3 Periodos de trabajo por un semestre o más, en los departamentos o empresas.								
4	MEMTM4 El programa institucional beca de trabajo.								
5*	MEMTM5 El programa preparación para el servicio.								
6*	MEMCU6 programa emprendedores Monterrey o emprendedores a distancia.								
7	MEMCU7 El programa de colportaje por veranos.								
8	MEMCU8 El programa de colportaje por inviernos.								
9	MEMCU9 Los programas de capacitación para colportores.								
10	MEMCU10 El programa de colportaje los domingos.								
11*	MEMCU11 El programa de colportaje fuera del país.								
12	MEMSV12 Clubes (Conquistadores, guías mayores, otros).								
13*	MEMSV13 Ministerios (santuario, drama mudo, otros).								
14	MEMSV14 Directivas de asociaciones de alumnos.								
15	MEMSV15 Campañas de recolección de fondos.								
16	MEMSV16 Administración de recursos de alguno de los clubes, ministerios o asociaciones.								
17*	MEMSV17 Actividades de servicio comunitario.								
18*	MEMSV18 Alguna de las agrupaciones musicales de la UM.								
19*	MEMSV19 Actividades del servicio misionero mundial (Ventana 10-40 u otros).								
20	MEMSV20 Empresas particulares para conseguir recursos para mi colegiatura dentro o fuera del país.								
21	MEMSV21 La empresa de un familiar o amigo para conseguir recursos.								
22	MEMSV22 Un emprendimiento personal que me ayudó a conseguir recursos para mi sostenimiento.								

Source: self made