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OPEN EDUCATIONAL COURSES APRENDO+ BY NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO (UNAM): ACHIEVEMENTS AND CHALLENGES

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Abstract

The National Autonomous University of Mexico has developed Aprendo+ open courses with the objective of offering the university community members and the general public the opportunity for the continuously updating knowledge or skills. In order to show the preliminary results of Aprendo+, we analize the metrics and platform reports for the 2018-2022 period. The results show that Aprendo+ has consolidated as a quality option for the continuously updating of the national and international university and non-university community. Being this a relatively new project, we found challenges related to information systematization, spreading and efficiency. To overcome these challenges will improve the content, reach and positive impact of Aprendo+ within the global community and its future.

Keywords:

Aprendo+, Open Educational Resources, Open Courses, Massive Online Open Courses

Introduction

This work has as precedent the "Building new spaces for education throughout life, Aprendo+ courses" conference, exposed by León-Martínez y Tapia-Rangel (2020) at the EDEN 2020 Annual Conference. In this work the authors exposed the general characteristics about their objectives, design and acceptance of the community towards the Aprendo+ Project developed by the National Autonomous University of Mexico (hereinafter UNAM). We are now focusing on showing the preliminary results given by the development of the Project emphasizing the achievements of the last 5 years as well as the upcoming challenges.

Open Educational Resources in the local and global context as precedents of Aprendo+.

The open educational resources are a variety of teaching and learning materials available for everyone, free usage and open licenses. This movement started locally in some American universities like The Massachusetts Institute (MIT), Harvard, Yale and Cambridge (Miranda & Tirado, 2012; Ramirez, 2013; Torres, 2021). Nowadays is a global movement (Brown et al, 2020) that summons and commits individuals, higher educational institutions and other organizations to create open and online courses that can be taken advantage by all people, breaking the physical classroom borders, as well as the frontiers between countries, sharing the educational resources through the web for global community capable of learning throughout life (Mihai, 2021).

Currently we find international experiences about the development of online massive courses. For example, some universities have come together to create projects of great importance like Mitx and Edx. besides, profit organizations such as Coursera and Udacity have developed a high offer of massive courses with a high student demand which has led to international recognition (Allen & Seaman, 2013; Sued, 2022).

We can find some platforms that have been able to establish themselves in Mexico, thanks to the great variety of courses and the design they use. MexicoX is the perfect example of this, a federal government

effort to design courses focused on the professional development through a network between public universities, government institutions and civil society. Another example is Capacítate para el empleo by the Carlos Slim foundation. On its website, we can find a high offering of courses focused on training and development.

In this local and global context and in agreement with the Institutional Development Plans 2015-2019 and 2019- 2023 (National Autonomous University of Mexico [UNAM], 2020; National Autonomous University of Mexico. Coordination of the Open University, Educational Innovation and Distance Education [UNAM CUAIEED], 2023) that

search the relevance of new courses that answer to the educational necessities of the population, support the creation of contents and its inclusion with the different university repositories, consolidate and increase UNAM national and international presence, the Open University and Distance Education Coordination (CUAED) created in 2015 the Aprendo+ plataform. The project (before called General Culture Courses) consists in the design of high quality, open and free massive courses which are focused on the people interested (university and non-university, local, national and worldwide) on updating the understanding and skills in their preferred fields of knowledge.

Aprendo+: Courses structure

The Aprendo+ educational offer is diverse, due to the join working between different schools and areas of the University for its development, where the most viable subjects are chosen to be developed in the courses. This offer has 78 different courses classified in four areas that are a part of the organizational structure of UNAM (UNAM, 2023). Those areas are: I) Physics, Mathematics Science and Engineering (7 courses); II) Biological, Chemical and Health Science (26 courses); III) Social Sciences (26 coursers); IV) Humanities and Arts (19 courses). Fields of knowledge 2 and 3 have the high offer while Area 1 showed the lowest offer (see Figure 1).
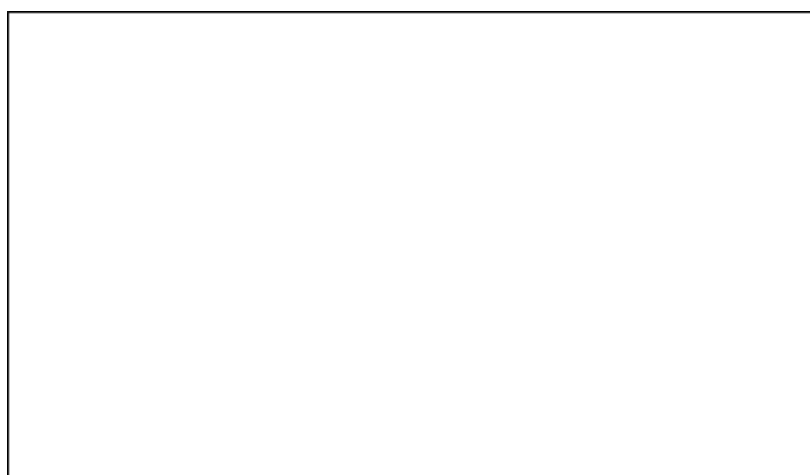

Figure 1.Distribution of the Aprendo+ courses by area.

The pedagogical offer is based on the explanation of specialized topics and content of each field of knowledge using the informal language, simple, clear, and casual instead of technical and formal language. The instructional sequences (Tobón-Tobón et al., 2010) for achieving the objectives are structured in 1) overall picture, 2) Units outlines, and 3) activities. On the overall picture describe the main structure of the course: the main objective of the course, number of units, type of activities, evaluation tools as well as the number of minimum hours that are required to conclude the course satisfactory. The units outlines include an introduction where the importance of the topics, the specific objective of each unit and the learning and self-evaluation activities of the course is explained. In the learning activities detailed instructions are given for solving exercises and task. The activities are accompanied by self-evaluation tools (questionnaires) that users can use as a guide for the solution of the activities and make a review about the general contents of the unit. At the end of the questionnaire, the platform shows general feedback that can help users identify areas of improvement.

The instructional design of the Aprendo+ courses provides two main characteristics, self-direct learning (Mihai, 2021) and flexibility. On one hand, the user can do the activities on its own without any help or guidance given that the activities and contents are congruent, offer all learning tools and clear instructions. On the other, given that there is no specific starting or closing schedule, the user has the freedom to choose between one or more courses at a time, start immediately, either, organize their personal and professional agenda and start later.

Methodology

A descriptive statistical analysis is presented from the metrics shown by the platform Aprendo+ (LMS Moodle) for the 2018-2022 period. Variables user-ID, course-ID, course name and email were used. Frequencies, percentages, percentage increase and in some cases average grades were obtained.

Results

Between 2018 and 2022, 1532690 subscriptions were registered for the platform courses. The 40.8% was completed, generating 626093 documentations of completion, while the 59.2% of the subscribed courses (906597) was left inconclusive (see Figure 2).

Figure 2. Completed and inconclusive course on Aprendo+ platform, 2018-2022.

The results shown next are focused on the statistics for the completed courses with the documentation of completion.

A total of 349369 that made the courses between 2018 y 2022 received the documentation of completion. Figure 3 shows sustained growth of the users who completed the courses between 2018 and 2020. From the 96 subscribed users in 2018, by 2019 58438 users registered with completed courses and documentation of completion, which shows an increase of 607.73%. By 2020 the number of users increased to 126738, a 116.88% increase in relation to 2019. In 2021 there was a decrease of users (79562) which shows a decrease of 37.22% in relation to 2020. Finally, in 2022 103812 users were registered (30.48% higher than the year before).
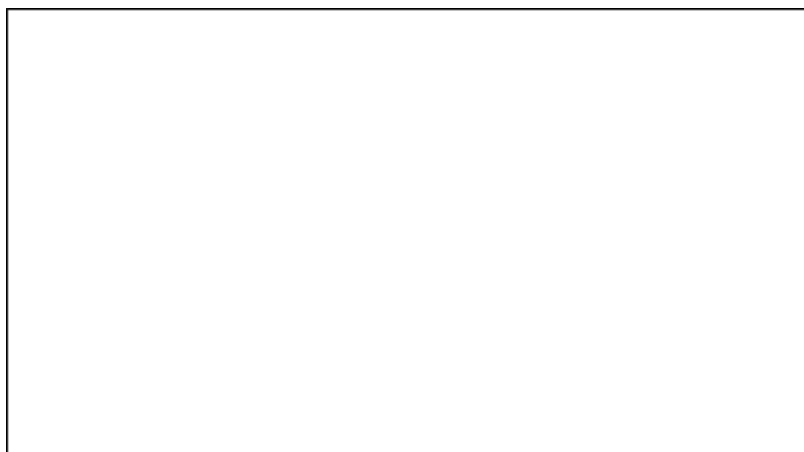
Figure 3. Number of users for Aprendo+ platform by year, 2018-2022

For the 626093 subscribed users that completed courses between 2018 and 2022 most of them used personal email accounts (53689 subscriptions), the rest used institutional email accounts (89104 subscriptions). Through the institutional email accounts, we can observe that firstly, users connected from different places of the world (203 countries). Second, as show in Figure 4, most of the users (71.73%) subscribed with educational accounts [domain
.edu (31%); .unam (3%); .ipn (1%); .uam (.07%) and others (37%)], from public and private college and university. The three main public Universities from México (UNAM, IPN y UAM), included the University where Aprendo+ platform resides (UNAM) shows the lowest number of subscriptions. Besides we found subscriptions with government accounts (25%) and government and non-government organization's accounts (3%).

Figure 4. Distribution of the subscriptions made with institutional email accounts, 2018-2022

According to the Figure 5, the field that shows the highest amount of completed courses with documentation of completion was Field 4, Humanities and Arts (209032 documentation of completion), followed by Field 1. Physics, Mathematics and Engineering (166080 documentation of completion), while Field 3. Social Science show the lowest documentation of completion (119392), followed by Field 2. Biological, chemical and health science (131589 documentación of completion).
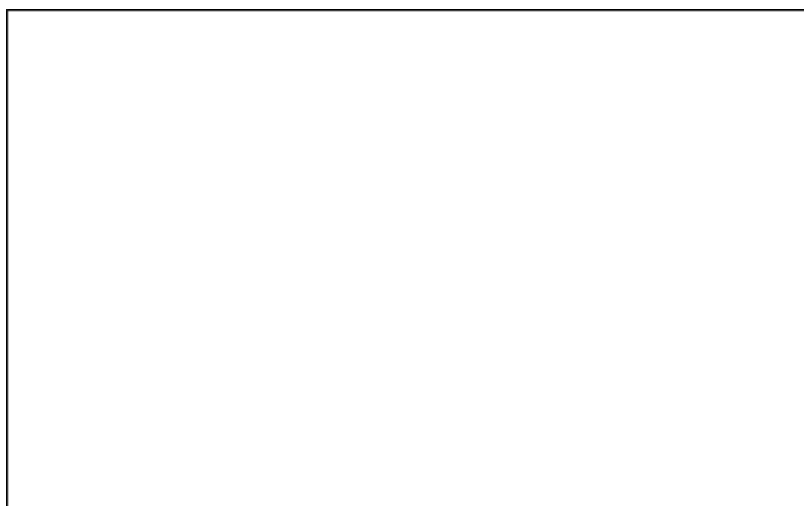
Figure 5. Documentation of completion by field of knowledge, 2018-2022

According to the distribution of documentation of completion had per field of knowledge per year, Field 4. Humanities and Arts are steady with the highest number of completed courses and documentation of completion from 2018 to 2022 and Field 3. Social science showed the lowest number of completed courses since 2018. It is important to acknowledge that in 2020 (period of the social distancing due to pandemic) was the year with the highest number of completed courses and documentation of completion (see Figure 6).

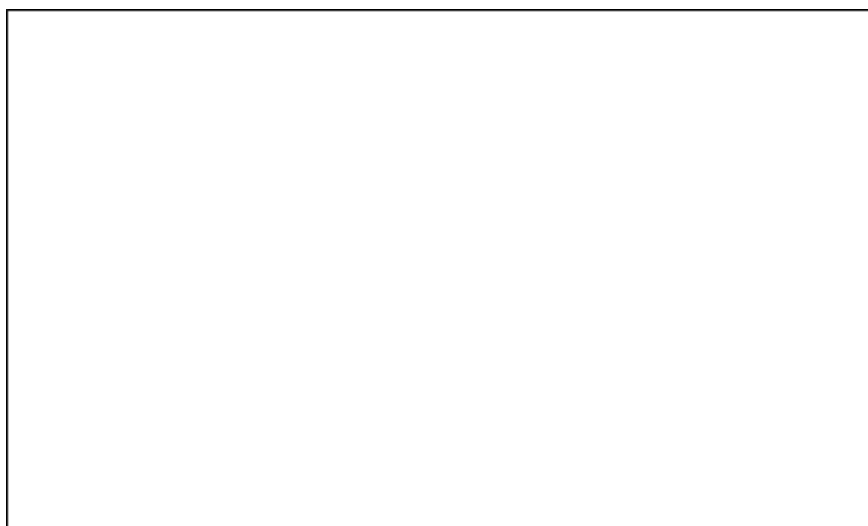Figure 6. Distribution of certification given by area per year 2018-2022

Finally, the Table 1 shows highlighted in green the 10 courses with the highest number of documentations of completion (completed courses) and highlighted in red the 10 courses with the lowest number of documentations of completion (completed courses). Most of the completed courses by users belong to fields 4 and 1. Unlike the courses with lower number of documentation of completion belong to fields 2 and 3. The amount of hours of the completed courses didn´t show a relation between the choice and duration of the course since it shows that the 10 most chosen courses demand a higher amount of hours to be completed (M = 19.1 hours) by the users compared to the average amount of time used by the users on least chosen courses (M = 16 hours).

Table 1: The 10 courses with higher documentation of completion and the 10 courses with the lowest documentation of completion. 2018-2022

Course name	Field of knowledge	Hours	Documentation of completion
Orthography for beginners	4	20	94370
Basic tools of Microsoft Office 2010. Excel	1	30	83942
Basic tools of Microsoft Office 2010. Word	1	20	37232
How to control my stress? Attention to anxiety disorders	2	16	31604
Self-esteem: transcendence of life	4	13	26774
Basic tools of Microsoft Office 2010. PowerPoint	1	30	21771
Public speaking and presentations	4	20	16134
One, two, three... for human rights	3	2	13570
Learn to say no	2	10	13362
How to take advantage of Google's free tools	1	30	12915
UC science murals in Mexico City	4	6	784
I Quit Drugs Whenever I want! Drug Use and Its Effects	2	30	723
Myths and realities of the "Drive without alcohol" program (Breathalyzer)	3	10	558
I didn't crash, they hit me. Steps to follow in Mexico City	3	6	557
And how do you see it? Television critical reception	3	20	515
The mind fades: Dementias	2	7	324
Behavior and development problems in children and/or adolescents? Solution strategies to live better	2	30	321
Do you know what psychosis and schizophrenia are?	2	9	294
No more myths: healthy and responsible sexuality	2	30	284
What is epilepsy? Origin and treatment	2	12	211

Discussion

The objective of this paper was to show the preliminary results of the application of the open educational resources Aprendo+ developed by the UNAM, highlighting the achievements reached and challenges in the last five years (2018-2022). Therefor the research findings are discussed in two axes, on one side, the achievements and on the other the challenges and improvement measures.

Achievements

Aprendo+ and UNAM institutional goals

The creation of Aprendo+ courses on the four fields of knowledge, the steady increase in users, subscriptions and completed courses joined with users' diversity on educational level, institutions, countries of origin and more, shows that Aprendo+ is a key project for reaching the institutional goals established by the Institutional Development Plans (UNAM, 2020; UNAM CUAIEED, 2023) and to develop university extension mission.

Opportunities for the Self-directed learning

By its characteristics, the Aprendo+ courses give the users the opportunity to develop attitudes and abilities related to the self-directed learning (time organization, motivation, self-confidence, discipline, among others) and that according with Mihai (2021), become especially useful to improve learning through life and outside the institutionalized educational context. The simultaneous subscription to the Aprendo+ course, the amount of completed courses and the documentation of completion during the last five years shows evidence on the possibility of learning in an independent way by building personalized learning routes on different scenarios in which the user chooses what, when, and to what rhythm they want to learn.

Training for work: usage of software and soft abilities

The courses with the highest number of subscriptions and documentation of completion refer to the training and development of their topics, specifically with the usage of software and the improvement of soft abilities such as assertiveness, self-esteem, stress control, communication, and others. The finding above shows not only the main interest and preferences of the Aprendo+ users but also gives evidence the use of this open educational resource as an option for the personal and professional development.

Valuable resources during social distancing by COVID-19

During 2020 the platform showed the highest number of subscriptions, completed courses and generation of documentation of completion. Razo (2020) points out that the amount of time and available resources motivated a lot of the people to find new hobbies and learning options. With this, teachers, students and the public in general could identify the greatest potential of the Aprendo+ courses in order to learn something new and free during social distancing and temporarily closure of schools. This way Aprendo+ offer and the interest of people made the University to continue with its basic functions. Sánchez (2022) points out Aprendo+ as one of the main open educational resources that allowed the University to answer to the sanitary crisis under the phrase: "La UNAM no se detiene" (UNAM never stops).

Generation of the interdisciplinary work methodolgy and quality assurance.

Unlike other open educational projects, Aprendo+ work methodology is focus on the multi and interdisciplinary collaboration of specialist of different areas of knowledge. This methodology considers five important areas (Project Administration; Pedagogical Advisory and Instructional Design; Style Correction; Design and Visual

Communication, and System and Technological Software) and defines the processes and activities of each one to design and create the pedagogical contents, visual proposals and technological support for each one of the courses and to guarantee their quality.

Recognition of the University academics for the creation of the courses

One more achievement of this project is that university teachers identify the importance of attracting the public to the knowledge of each area. The teachers that participated in the design of Aprendo+ courses have been capable of creating original content with simple and attractive language that help to the accomplishment of the university extension.

Challenges

Courses for health education and prosocial behaviour

Aprendo+ courses with low registration and documentation of completion during the last five years are characterized for address topics related to the health, education and prosocial behaviour (Field 2). Both topics are sensitive due to the involvement of private people´s life. This does not mean we should not develop courses focused on health care, moreover on the post COVID-19 times. So, in order to improve Aprendo+ courses, it is important to solve two matters. The first has to do with the course's topics, contents and names, the second has to do with the distribution of information.

On the topics and contents, the challenge consists of selecting titles, topics and contents on health which are attractive, easy to understand and apply in daily life. It is unlikely that the title of a topic extremely specific like psychosis or schizophrenia becomes attractive for users not familiarized on mental health. Regarding to the spreading of the courses, the challenge consists in creating strategies that call potential users.

Dropout and terminal efficiency

Aprendo+ courses attract thousands of people who subscribe to the courses, but they interrupt them for different reasons. At Aprendo+ is extremely hard to calculate the dropout rate for the users can interrupt the course and take it back whenever it suits them best. However, we consider that time management and adaptability for online courses are the main reasons for not completing the courses. By not having a specific starting or closing schedule, users do the courses on the first weeks and then they interrupt them to do different activities. Such as for some inexperienced or non-motivated users, the lack of a guide or tutor to help solving doubts or to pressure to complete the course in addition to the lack of an official certification may lead to the dropout of the course. Therefore, we would have to implement new strategies that focused on the motivation of users like giving them micro credentials that support the abilities and knowledge acquired through the courses and that are useful in the work environment (Brown et al., 2020).

Systematization and processing of personal data

Currently, we do not ask for personal data on the platform with the purpose of avoiding legal requirements related to data protection. So the challenge consists of generating the proper conditions that allow them to collect and processing the personal data of the Aprendo+ users in order to get the learning metrics, feedback and improvement of the open resource. Through of data like age, gender, nationality, studies, country of residence, starting and ending date, number of subscribed users in a period of time, among others, we can define user profiles, identify needs and making decisions the Aprendo+ continuous improvement.

Measurement of the user satisfaction level

In order to improve the user experience, we need to develop a strategy to measure the satisfaction levels at the end of the course. This will help to identify the improvement areas for each one of the courses, the continuity of the learning objectives, contents, instructions and planned activities as well as to identify the users' interests in creating new courses.

Diversification of the offer

We need to increase the learning offering, update periodically the course catalogue in all learning areas to the users in school as well as new users. We must increase the interest of academics of four fields of knowledge to design courses for Aprendo+. Therefore, it is a priority to measure the global impact of the platform and explore the possibility for the teachers to get digital badges as international creators of the open and high-quality educational resources.

Spreading

Aprendo+ is a project that has proven to be of a great reach and impact for learning throughout life, therefore we recommend to share the educational offer of this platform, through different media and institutional channels using wide reach campaigns like social media and gathering user reviews to motivate others.

Conclusion

The projects of the open educational resources based on clear, defined and interdisciplinary working methodologies represent quality options to get the knowledge into the global community who volunteer commitment to learning new skills or acquiring new knowledge, who incorporate continuous learning as part of their lifestyle. Aprendo+ is an example of what the universities can do to transcend and reinvent their spaces, times, ways of teaching and learning as well as to build a promising future for everyone.

References

Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Sloan Consortium.

Brown, M., McCormack, M., Reeves, J., Brooks, D. C., Grajek, S., Alexander, B., Bali, M., Bulger, S., Dark, S., Engelbert, N., Gannon, K., Gauthier, A., Gibson, D., Gibson, R., Lundin, B., Veletsianos, G. & Weber, N. (2020). *2020 Educause horizon report teaching and learning edition*. Educause.

León-Martínez, J, & Tapia-Rangel, E. (2020). Building new spaces for education throughout life, Aprendo+ courses. *Proceedings of the EDEN 2020 Annual Conference,* pp. 398-402. https://doi.org/10.38069/edenconf-2020-ac0038

National Autonomous University of Mexico. (2020). Plan de Desarrollo Institucional 2019-2023. https://www.rector.unam.mx/doctos/PDI2019-2023.pdf

National Autonomous University of Mexico. Coordinación de Universidad Abierta, Innovación Educativa y Educación a Distancia. (2023). Aprendo+. En línea de todo y para todos. https://aprendomas.cuaed.unam.mx/

Mihai, O. I. (2021, January). Self-education and lifelong learning. *Proceedings of the 8th International Conference on Education and Education of Social Sciences*, pp. 220-223. https://doi.org/10.51508/intcess.2021157

Miranda, A. & Tirado, F. (2012). Las nuevas universidades. El fenómeno de comunidades de aprendizaje en línea. *Revista de la Educación Superior, XLI*(4)(164), 9-33

Ramírez Montoya, M. S. (2013). Casos de formación e investigación en el área del movimiento educativo abierto en Latinoamérica: alcances, retos y oportunidades. In P. Canto (coords.), *Educación a distancia y tecnologías de la información y comunicación* (pp. 113-126). Unas letras industria editorial.

Razo, D. (2020). El renacimiento de los cursos en línea en la era del COVID-19. https://observatorio.tec.mx/edu-news/cursos-online-pospandemia/

Sánchez Mendiola, M. (2022). La Universidad Nacional Autónoma de México y la educación en la pandemia: respuestas, estrategias y retos. In R. J. Mercado del Collado & A. D. Otero Escobar (coords.), Háblame de TIC: Enseñanza remota de emergencia en la educación superior: ¿Base para la educación híbrida? (pp. 29-51). Brujas Editorial.

Seud, G. (2022). Coursera y la plataformización de la educación: operación de mercados, datificación y gobernanza. *Transdigital, 3*(5), 1-24. https://doi.org/10.56162/transdigital95

Tobón, S., Pimienta, J., & García, J. A. (2010). *Secuencias didácticas: aprendizaje y evaluación de competencias*. Pearson-Prentice Hall.

Torres Velandia, S. A. (2021). Recursos educativos abiertos y políticas institucionales en universidades públicas mexicanas: estudio de caso. *Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 12*(22). https://doi.org/10.23913/ride.v11i22.865