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To cite this article: Angelita P. Howard, Danielle Duvernay, Lanisha Howze & Shavondra Leak (2023) Online Learning Communities: Bridging the Gap among Historically Underserved Populations in Health Science, American Journal of Health Education, 54:4, 251-258, DOI: [10.1080/19325037.2023.2209618](https://doi.org/10.1080/19325037.2023.2209618)


To link to this article: <https://doi.org/10.1080/19325037.2023.2209618>

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FEATURE ARTICLE



Online Learning Communities: Bridging the Gap among Historically Underserved Populations in Health Science

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ABSTRACT

Evidence suggests that there is a gap for underserved populations in health sciences. Through online education, access to learning opportunities is growing in health informatics, biotechnology, health administration, and health education. However, online education can lead to feelings of isolation and disconnection from the educational community. Morehouse School of Medicine is working to mitigate these issues through the online learning community (OLC). The OLC was established through the core foundation of the five Cs to create community support for under-represented populations. We evaluated the core foundation using the five Cs methodology and designed an approach to address blind spots to enhance every student participating in the community. Determining the student type and general needs, as well as the resources available to be maximized for underserved populations, corresponded with the current student survey data collected. We found that the online learning community at Morehouse School of Medicine served as a tool for facilitating discourse and community-building among the online students. Through this tool, students were afforded the opportunity to enhance their education and increase engagement via collaboration and connection with their cohort.

ARTICLE HISTORY

Received 14 February 2023
Accepted 11 March 2023

Background

The Morehouse School of Medicine (MSM) Office of Online Education and Expanded Programs (OEEP) offers online graduate degrees in the areas of health informatics, biotechnology, health administration, and justice-involved care. These degrees have attracted primarily African American students ranging from those who are recent college graduates to those who have not been in a higher educational setting for several years. Additionally, some of the students have never taken an online course.

MSM offers four online degree programs (Master of Science in Biotechnology, Master of Science in Justice-Involved Care, Master of Science in Health Informatics and Doctor of Health Administration). Our mission focuses on advancing healthcare in underserved populations in which many of these individuals suffer with chronic diseases. In the fall of 2022, we launched the Doctor of Health Administration program, which overall addresses the well-being of people at large through hospital systems, management, and oversight while decreasing health disparities. Through the Master of Science in Justice-Involved Care, we are training individuals to address mental illness, a chronic condition that frequently


impacts justice-involved populations. The program also focuses on providing a continuum of care for returning citizens to help reduce recidivism.

Morehouse School of Medicine's Master of Health Informatics (MSHI) introduces learners to several courses which support the development of tools and potential solutions to chronic disease prevention and management. Some courses of note include Big Data Management and Analytics, Clinical Data Mining, and Clinical Decision Support Systems. Through the exploration of the emerging field of Artificial Intelligence, it is expected to revolutionize the practice of medicine, specifically in terms of its impact on chronic diseases. Additionally, students are exposed to implementing Machine Learning (ML) algorithms which are the foundation of predictive computerized models to promote and elicit optimal patient outcomes. MSHI students gain an understanding of how the healthcare industry harnesses the tools of AI to support clinical decisions that could aid in not only managing chronic diseases but also preventing chronic diseases through early intervention.

MSM's Master of Science in Biotechnology program to promote health education related to biotechnological

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 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/19325037.2023.2209618>.

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advances for chronic diseases such as cancer, diabetes, and hypertension. The course curriculum consists of courses such as Making Medicine, Bioethics, Genetics & Epigenetics which expanded the depth of knowledge in the interrelated connections of understanding the disease, treating chronic disease, and implementing ethical practices. Throughout the enrollment of the program future biotechnologists, healthcare professionals, and public health educators build upon current knowledge and explore innovative techniques to improve health equity in education, healthcare facilities, and public health.

Understanding the population in which we serve and the guidance we want to instill is one of the fundamental aspirations of our Online Learning Community (OLC). The inherent advantage of OLCs rests in their ability to provide guidance and support to traditional students who have fewer time constraints and non-traditional students with limited time due to established commitments.

According to the National Center for Education Statistics (NCES), a non-traditional student is defined by three criteria: enrollment status, financial and family status, and high school graduation status.¹ Non-traditional students often have part-time or full-time jobs, and may have dependents or other responsibilities, which make in-person learning more difficult. OEEP defines traditional students as those who graduated within the last two years, have no dependents, and are not employed full-time. The recent societal trend toward a digital and virtual landscape makes OLCs one of the most appealing methods for students interested in continuing their graduate-level education.

Online learning communities also provide a framework of support that enables students to connect with professors, administrators, and fellow learners. Students can seek assistance with assignments and discuss the course material to develop enhanced knowledge and insights. OLCs allow students to share their unique perspectives and gain exposure to new ideas via continuous collaboration.

One of the primary advantages of OLCs is their ability to guide students through challenging concepts bolstered by a collective community. OLCs, in terms of the educational arena, are virtual spaces where students can obtain information and support for their academic endeavors from their institution and their academic cohort. OLCs provide a secure space for lifelong learning.

Another advantage of OLCs lies in their ability to break down and eliminate geographic barriers to learning. In the U.S., demands for flexible work hours and working from home have also translated into increasing

demand for pursuing higher education from home. This is especially true of older, non-traditional students, who may have additional responsibilities and are likely already a part of the workforce for whom OLCs have significantly impacted. OLCs allow traditional and non-traditional students to access campus resources without traveling. The inherent advantage of Online Learning Communities lies within their ability to provide guidance and support to traditional and specifically to non-traditional students.

Online learning community

Online learning communities provide a support framework that enables students to connect with professors, fellow students, and administrators. Students can seek assistance with assignments, ask clarifying questions, and discuss the course material to develop enhanced knowledge and insights. OLCs allow students to share their unique perspectives and provide exposure to new ideas.²

The United Negro College Fund (UNCF) and Deloitte Digital, a technology consulting firm, jointly launched an online learning community (OLC) platform entitled HBCUv.³ The goal is to establish an online community to connect students, faculty, and staff at historically black colleges and universities (HBCUs). This endeavor is focused on bridging the online infrastructure and digital divide experienced by HBCUs, thereby helping the institutions to support low-income and underserved student populations.⁴ HBCUv is designed to serve as a remote learning hub to allow students to connect with faculty and fellow students while completing academic courses through synchronous and asynchronous learning opportunities.⁵

Due to the challenges that arose because of the COVID-19 pandemic, the necessity of a robust remote educational platform for the disenfranchised became of increased importance, which helped formulate the following objectives:

- Promotion of Black excellence through courses taught by preeminent Black scholars
- Provide tools and technology for career planning and degree program matching,
- Connect Black talent from multiple HBCUs in one online space,
- Create a flexible platform so students can select the learning style that best fits their needs,
- Leverage machine learning and data to measure student performance while also providing real-time feedback to instructors,

- Serving as a resource that all HBCUs can utilize while sharing resources, best practices, and knowledge.⁵

An estimated 8,000 students will be able to cross-register and take courses on the HBUCv platform beginning as early as 2023.³

In addition to a well-developed learning platform that allows for direct feedback, the invisible or intangible scaffolding needed to build an online community at HBCUs involves facilitators, program directors, professors, career development advisors, and library resources.

Student type

The student population at Morehouse School of Medicine is predominately African-American, with more than 70% of the students identifying as African-American or Black. 63.1% of students are female, and 36.9% are male.⁶ The OLC demographics mimic these trends, with 162 out of 163 students (99.4%) identifying as Black or African-American and 116 (71.2%) identifying as female.

Program design

Online learning at MSM is less than four years old, having its first class beginning in 2019. Early in its foundational years, we recognized the importance of a true community as the foundation of our existence. Although we did not name the online community until a year later, we were consciously building a space where we would serve our online students outside of their traditional classroom with the hope of enhancing study skills, career building, communication, and other elements that would create a holistic experience for our students. The online learning community at MSM extends to every student who finds value in enhancing their educational journey. Being an online student is naturally isolating as one does not engage in face-to-face classroom interactions. Morehouse School of Medicine utilizes a cohort format in all its online programs, which allows students to start and finish the program together and become familiar with their classmates. They can attend synchronous online sessions, talk on discussion boards, or participate in an online game night with others in their cohort and different cohorts. This fosters a sense of community that is important not only for student success but for student retention.⁷ Additionally, providing multiple modes of interaction enables a sense of connectedness.⁷

The five Cs

Our OLC culture is based on the foundational principles of the five Cs, which are communication, commitment, collaboration, content, and connection. Fostering these attributes in an online community must be structured in an intentional, organic, and cohesive way.

Communication

One of the values of having an online community is cultivating clear communication between staff, professors, and student-peers in the cohort. The communication process includes exchanging information from sender to receiver clearly and concisely.

Due to the nature of online learning communities, consistent and effective communication is one of the essential components. It can take on myriad forms, including direct calls, emails, texts, video conferencing, mobile group messaging, educational webinars, and interactive live classroom sessions. The ability to connect and interact with faculty, administrators, and classmates quickly, efficiently, and often in real-time is one of the most coveted aspects of OLCs, specifically in comparison to more traditional educational models.

OLCs are the next step in the evolution of communication which goes one step beyond individualized one-on-one communication such as phone calls and emails or group communications, which require coordination of schedules such as Zoom or Microsoft teams. Instead, OLC incorporates other applications such as GroupMe and Slack, which offer effortless collective group interactions where instructors and students can interface and connect instantly in real time or view conversation threads and recordings of content at their convenience.

Commitment

MSM established learning communities for medical students in 2011. The “purpose is to discuss relevant student skills and behaviors, foster a sense of community, improve peer-to-peer relationships, and encourage relationship development between students and faculty.”⁸ The foundation and model for a learning community established at MSM have been translated to an online environment through the faculty and staff of the Online Education and Expanded Programs (OEEP). “The Office of Online Education and Expanded Programs is charged with the leadership and coordination of MSM online education programs and courses by *“providing high-quality learning opportunities that leverage use of*

various technologies to ensure that students are: 1) prepared for current and emerging careers; 2) empowered to serve community stakeholders; and 3) aware of the factors that impact and promote health equity.^{8(p1)}

Our online learning community is committed to providing the appropriate tools, information, and assistance needed for students to excel in their courses. The OLC established regular check-in sessions at the beginning and end of each term to offer encouragement and assess how students cope with their studies, explicitly creating a forum where everyone feels comfortable asking questions or citing concerns.

Collaboration

The collaboration to build an online community is somewhat invisible to the students utilizing the resources provided through the OLC. It is the behind-the-scenes framework in which the structure of the OLC is established and maintained. To establish and maintain a virtual learning community and foster a connection within the MSM community, the leadership of OEEP advocates and creates relationships with faculty, industry, and alums to facilitate open communication.

In the absence of in-person or face-to-face communication, the need for collaborative learning is of paramount importance. Our OLC stimulates collaboration by consistently soliciting opinions on how we can improve access and services through our course surveys and group check-in meetings. The OLC also encourages all its learners to contact our staff immediately if they encounter personal, technical, or other issues or situations that hinder their ability to complete or submit coursework.

Connection

Establishing connections is one of the fundamental building blocks of nearly all online learning communities. The virtual nature of OLCs is that many learners may feel isolated and disconnected, which is one of the reasons our OLC diligently works to foster interrelatedness between students, faculty, and staff.^{9,10} Our OLC also encourages and supports mental rejuvenation and de-stressing by creating a group chat where everyone in a particular cohort can check in, obtain a study buddy, and post questions for fellow students to answer. It creates a safe space to aid students in connecting in an informal setting.

Curriculum

The online learning community provides career readiness services, including resume and cover letter writing tips, assistance, and networking opportunities. Students can interact with industry professionals via Zoom sessions to provide insight into career options.

Study skills are essential for any student, whether in a traditional brick-and-mortar or online program. To that end, the online learning community provides opportunities to assess a student's learning style and access tips on how to study based on their learning style. Additionally, there are resources provided with recommendations for studying more efficiently.

Another area of importance for our online students is time management. As many of our students have outside jobs, families, and other responsibilities besides their coursework, time management is critical for successfully navigating the program. Through Zoom sessions and other programming, the online learning community provides participants with information on how to manage stress, avoid burnout, and care for oneself while juggling family, work, and the online program.

The online learning community provides dynamic resources that students can access on-demand and synchronous sessions with tips on staying organized and managing one's time effectively. These sessions are offered several times throughout the program at times that are conducive for working students to attend.

The online learning community also offers school support resources with information for the writing collaborative, library services, counseling services, and career services. Experts in these areas also provide workshops for students and are available as needed to assist students. Each new cohort of students can attend synchronous sessions on navigating online library resources, using the writing center and proper APA format, accessing counseling services, and utilizing career services.

Outcomes/survey results/figures: results of student feedback

We distributed surveys to all graduate students enrolled during the 2021–2022 academic year in the Master of Science in Biotechnology (MSBT) and Master of Science of Health Informatics (MSHI) programs. The purpose of the survey was to evaluate the Common Core Constructs of the Online Learning Community (OLC) environment and its dynamics from the perspective of the cohort. Students were requested to respond based on a 5-point Likert scale (strongly agree, agree, neutral, disagree, or strongly disagree). Overall, the students

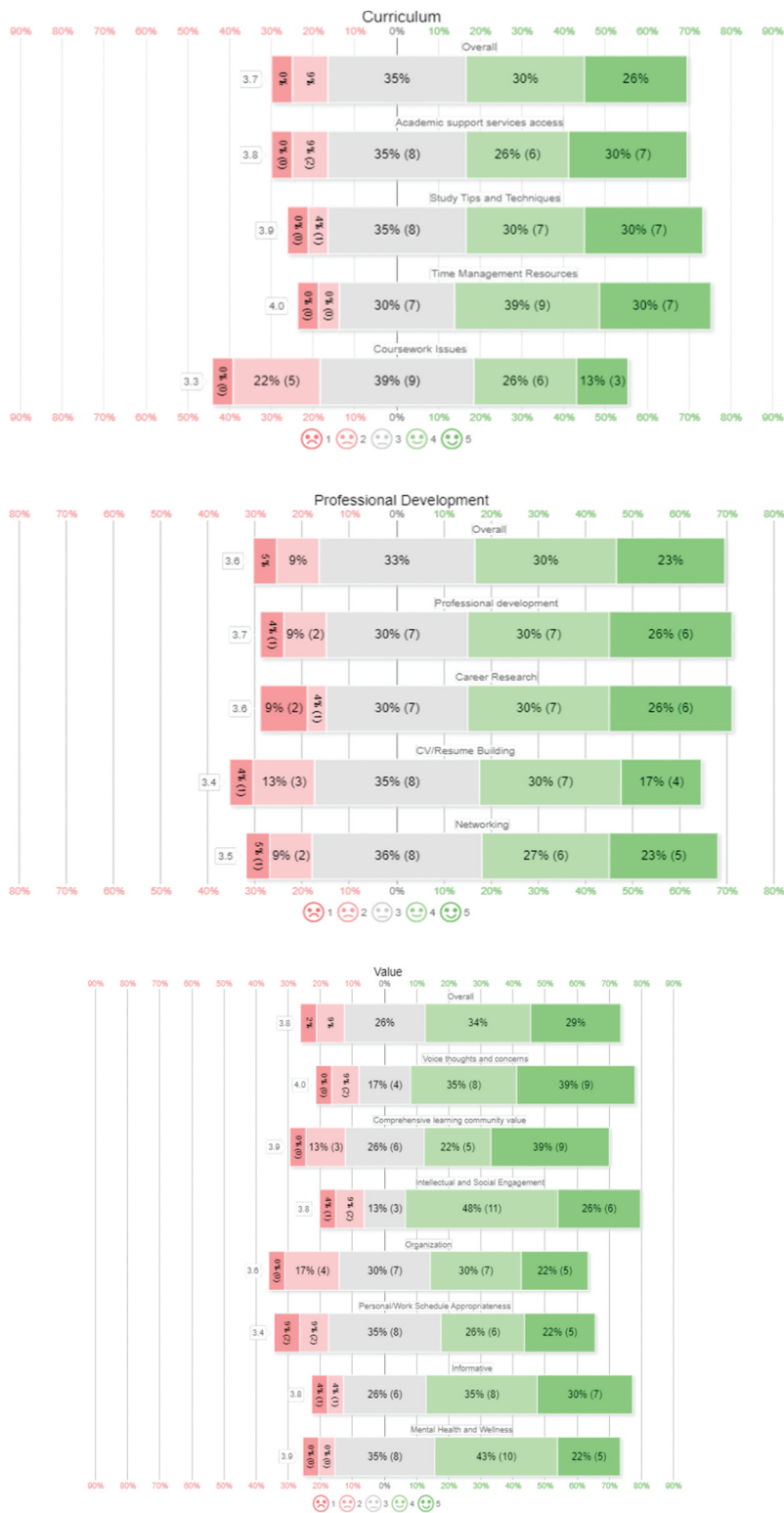


Figure 1. Online learning community survey results.

Morehouse School of Medicine online students were surveyed to determine their impressions of the Online Learning Community (OLC). Survey questions were separated into categories to help exemplify the key concepts of Curriculum, Professional Development, and Value. A 5-point Likert Scale was utilized to determine the level of satisfaction for the three categories. The overall score for Curriculum was 3.7, Professional Development was 3.6, and Value was 3.8, which suggests that most students were satisfied with their OLC experience.

rated their experience with OLCs at 3.7%, indicating that they most agreed that the OLC was beneficial in supporting their educational journey. See [Figure 1](#).

Students felt the OLC performed superiorly and involved professional development, facilitating access to academic support services and assisting with honing skills by providing study tips and methods for improving time management. Additionally, students greatly appreciated having a safe space to voice thoughts and concerns, as well as being able to address any mental health and wellness issues.

Some areas of stated improvement revolve around scheduling, organization, and resolving issues surrounding difficulties with coursework. Moreover, students felt the OLC could make some progress in career research, resume building, and general networking. It is essential to note that students agreed that the OLC was credible in addressing those needs and issues, even in the areas that need improvement.

Key takeaways from the survey were that respondents appreciated the different modes of interaction such as GroupMe, small peer check-in groups, live feedback sessions, and recordings of informational sessions to be viewed by those unable to participate in real-time.

Furthermore, most respondents affirmed that they would recommend the OEEP online learning community to future students to engage with classmates, improve academic performance, and learn about APA formatting, resume building, and tips for maintaining wellness and mental health.

Translation to Health Education Practice

Plan assessment

As a part of understanding what our online students needed and wanted to complement their educational journey, we assessed students in an earlier phase of the programs. This assessment would help us to “recruit and/or engage priority population(s) . . . ” (1.1.5) by aligning their needs.^{11(p1)} Although our programs are asynchronous in general, the learning community has often been conducted synchronously with a recording for those who could not attend. Throughout the year surveys are used to help determine the effectiveness of the OLC. We have been able to “identify data gaps” (1.2.6.) which the literature and experiences confirms additional methods for us to address areas like ways to engage students more, how to better assess the alignment of individual courses to the learning community and reducing barriers to address what we call social determinants of

education.^{11(p1)} It was important to the researchers to “develop recommendations based on our findings” (1.4.4).^{11(p1)} We titled this section “lessons learned.” This will help as we expand offerings and bridge any gaps in the OLC.

Planning

The OLC was created with the expressed purpose of utilizing technology to offer continued learning experiences unbound by geographic or time constraints. To this end, the key administrative OEEP staff engaged various internal stakeholders in planning and developing the OLC (2.1) for students (Howard, 2023).¹¹

Additionally, MSM prides itself on keeping up with modern educational trends in healthcare. One of the main goals of the institution revolves around educating a workforce that increases patient care and supports healthcare systems (2.2).^{11,12}

Implementation

Throughout their tenure at MSM, students are provided with resources through the OLC to complement their learning and help inform their post-graduate decisions (3.1.1).¹¹ Through the OLC and other ventures, we provide a space for students to enhance their education and “create an environment conducive to learning (3.2.1).”^{11(p4)} We collect data through periodic surveys to assess the online learning community and inform decisions to improve the community (3.2.2, 3.3.1, 3.3.2, 3.3.3).¹¹ Additionally, students are afforded both synchronous sessions and asynchronous learning modules that provide valuable information about and insight into their respective fields (3.2.5).¹¹

Evaluation and research

One of MSM’s Online Learning Community’s focus is determining the effectiveness of its virtual programs among the student body. This is accomplished by conducting synchronous evaluation sessions with each cohort throughout the term and implementing surveys (4.1.9).¹¹

Feedback gained from the direct interaction and written responses allows the OLC to determine which areas of the various programs are working well and which areas need improvement (4.1.4).¹¹ Based on anecdotal and survey results, OLC was able to surmise that most learners appreciated those interventions that facilitated interactions with professors, administrators, industry leaders, support staff, and their peers (4.3.6).¹¹ Students indicate that such interplays afford

them the ability to obtain crucial information while also being able to ask questions and address any issues.

OLC analyzes all the collected data from the students and develops recommendations for improvement areas for its future programs, including enhancing access to skill-building classes and increasing opportunities for formal and informal interactions between leaders and learners (4.5.3).¹¹

Advocacy

Morehouse School of Medicine is an HBCU that has from its founding been an advocate for underrepresented populations in the healthcare field. MSM ranks in the top 25 among HBCUs in the country. Additionally, the online MSBT program was ranked number one for two consecutive years by intelligent.com. This history of advocacy is a core component of MSM strategy to extend a hand up and reach potential students through several outreach strategies.

The Summer Bridge(s) Pipeline Program is an open door for students to have a direct pathway into different sectors that intersect health education, health equality, drug development, and biologics resulting from the exposure to biotechnology curriculum and corporate connections (5. 3.1, 5.4.1).¹¹

Communications

Though the overall OLC consists of students from all degree programs, students are also afforded the opportunity to engage with cohorts from their own degree program through applications such as GroupMe (6.1.1, 6.1.3).¹¹ Additionally, students are encouraged to engage on LinkedIn and other social media platforms to grow their networks and find internship, educational, and career opportunities (6.1.3).¹¹ We also communicate with students via a text messaging service in which they are grouped by degree and cohort to receive program-wide as well as degree and cohort specific information (6.1.1, 6.1.3, 6.3.3).¹¹

Leadership and management

The online learning community is overseen by the curriculum manager who works with the online education department team to assist in some of the sessions that will be provided. Assessment of training needs (7.2.1) happens at both the student level and the staff level.¹¹ We assess where the students need more training. For example, many students who haven't written papers often struggle in the area of academic writing, so we have quarterly seminars to address these learning gaps.

While industry volunteers are paramount to the work we do in the learning community, our "evaluation of their performance" (7.3.5) is more informal than it is formal.^{11(p1)} We do however provide students an opportunity to give feedback on the presentations. We often look for signs of engagement and interaction to help determine students' perception of the time together. Volunteers who present are provided with background of our programs and the students in whom they will engage. MSM online programs are built with the foundation of industry engagement, so as volunteers come, it is our goal to retain them (7.3.7) in helping to assist with career and internship opportunities for our students.¹¹ As an institution of higher learning, we have established strategic plans that govern our processes and intended goals. Additionally, we have specific methods to report our data and outcomes that are used to inform improvements needed (7.5.1).¹¹

Ethics and professionalism

The professionalism and ethical values of MSM are a part of every endeavor that is undertaken. During the Convocation White Coat & Pinning Ceremony, every discipline takes an oath of ethics and professionalism. The Scientist pledge states, I will carefully consider and remain mindful of the ethical implications of my work. The mission of MSM is to increase the diversity of the health professional and scientific workforce and address primary health care through programs in education, research, and service (8.1.1, 8.1.2, 8.1.4).¹¹ One way this is ensured is through the Bioethics course where students learn ethical research, data collection, FDA regulations, and best manufacturing practices. Professionalism is practiced by leadership, staff, students, and community partners who share the fundamental belief that honesty, integrity, and transparency build strong collaborations.

Lessons learned & recommendations

Based on the findings of the student data, there are several lessons learned and recommendations for enhancing the quality of the learning community and understanding of this program on students' engagement.

Lessons learned

- (1) Students are represented in different time zones, and although there has been a consistent effort to try and provide a time conducive to learners, the participation is < 25%. Students are surveyed regarding available times and what topics they

are interested in to address their needs better and enhance their educational journey.

- (2) The online learning community is optional, although it is highly suggested. While students are not enrolled in the learning community as a course for credit, they are placed in the community as a learning experience with information that expands to better their educational success in an online environment.

Recommendations

- (1) Include weekly, bi-weekly, or bi-monthly live educational sessions with professors or industry experts.
- (2) Create information and resources tailored to a specific program (e.g., DHA, MSHI, MSBT, etc.).
- (3) Establish a consequence-free environment where students can ask clarifying questions and advise of areas of confusion or difficulty.
- (4) Provide a certificate of completion that students can add to their resume and LinkedIn profile.
- (5) To increase participation in the OLC, the administration will establish clear lines of communication with students via GroupMe and texting services regarding OLC programming and events.
- (6) Students also crave program-specific content and would like to connect with a professor or professional with direct experience in their field of study so they can ask questions and seek career advice and direction.

Conclusion

The Online Learning Community at Morehouse School of Medicine is a first of its kind toward intentionally setting aside time, activities, and resources to help who-olistically enhance the educational journey of the online student.

The online programs at MSM are accelerated; the time to completion in most instances is 12–14 months. With such a rigorous program schedule, a systematic approach is essential to ensure student success in the health sciences. We designed our OLC to support a diverse population of students, ranging from individuals who recently completed their undergraduate journey to those with established careers looking to obtain an advanced degree. The OLC considers the student body and the need to be community-facing and employment ready. Our goal is to continue propagating a virtual learning community to support online learners tangibly through promoting communication, study skills, and career building.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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