

**Benefits and Costs of MOOC-Based Alternative Credentials**

2018 - 2019 Results from End-of-Program Surveys  
November 2019

**Introduction**

In the early days of xMOOCs, one of the goals of institutions offering these free courses was to spur innovation and experimentation with new models for earning credentials ([Hollands & Tirthali, 2014](#)). With surprising speed for higher education, new programs based on MOOCs were developed and rushed through faculty approval committees. Several have already crashed and burned (e.g., [San José State University's foray with Udacity](#) and [Arizona State University's Global Freshman Academy](#)). A few have flourished and matured into stable offerings with predictable and positive outcomes for the learners and offering institutions alike. At least a few butterflies have emerged from the [Metamorphosis of MOOCs](#) while others are still drying their wings and figuring out whether they can get - and stay - airborne.

For example, MIT's brainchild, the [MicroMasters](#), first offered in [Supply Chain Management](#) in 2014, has been emulated by 30 additional institutions around the globe, offering 57 programs between them, each costing learners between \$320 and \$1,500. The [Supply Chain Management MicroMasters](#), priced at \$1,080 - \$1,200, has undoubtedly been one of the most successful experiments with more than 300,000 learners registered for at least one course, 30,000 of whom earned a certificate of completion for the course and over 1,800 completers of the entire MicroMasters to date (E. M. Ponce Cueto, personal communication, November 1, 2019). The holder of a Supply Chain Management MicroMasters can apply to one of 22 universities in 10 different countries, including MIT itself, who will accept the MicroMasters credential as partial credit towards a full Master's degree. The MIT blended Supply Chain Management Master's program has already graduated 76 learners in two cohorts with a third cohort starting in January 2020. These students complete the MicroMasters online and subsequently spend over 5 months on campus (M. J. Saenz, personal communication, November 1, 2019). [Littenberg-Tobias and Reich](#) report that the blended Master's students earn slightly higher GPAs in their on-campus courses compared to the fully residential Supply Chain Management students and to MIT graduate students from other programs who are taking a Supply Chain Management course. They also report that "job-relevance" is one of the key reasons learners persist in the program.

Other institutions have met with success by offering [Specializations](#) which cost learners a few hundred dollars for a series of related courses. For example, Wharton Online offers nine Specializations in business topics, one of which is Business Foundations. This program, comprising five 4- or 5-week courses and a 5-week capstone project, can be completed in 6 months for a total cost of \$474. Wharton Online has seen over 6,000 learners earn certificates for completing one or more of its Specializations and many thousands more are subscribed. Gross revenues from Wharton's Specialization subscriptions are approximately \$20mm (A. Trumbore, personal communication, November 5, 2019). Trumbore<sup>1</sup> surveyed several thousand learners who completed at least one course in a Wharton Specialization and documents a variety of career-related benefits. With benefits accruing to both Wharton and the learners, prospects for economic sustainability of these programs is bright.

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<sup>1</sup> Trumbore, A. (in press). The future of business education: new economies of automation, certification and scale. In Jason Wingard (Ed.). *The Future of Work: Optimizing the Talent Pipeline*. Stanford University Press.

### What this Study is About

Two years ago, we embarked on a study to assess the benefits and costs to learners of participating in these types of programs. We surveyed learners as they were just beginning MicroMasters and Specializations programs to ask them about their education, earnings, and career status, and what kinds of benefits they were anticipating from earning these alternative credentials. We also investigated the direct costs and opportunity costs incurred by learners participating in these course series: who was paying for the courses, whether participants were sacrificing paid work time to complete coursework or whether employers were paying participants to study. We reported results from 3,086 beginning-of-program surveys completed between February 2017 and August 2018 (see [Hollands & Kazi, 2019](#)). The typical learner was White or Asian, well-educated, employed and 30 – 44 years old. We found that 60% of the learners planned to complete all courses in their program, although only 35% expected to pay for the culminating certificate. The most commonly expected benefits were improving performance in a current job (44% of respondents) and help in starting a business (27% of respondents). Nine percent of the MicroMasters participants expected they would apply for the full Masters degree to which they could apply the credits currently being earned. Overall, 12% of the respondents expected to apply for some type of formal degree after completing this alternative credential.

This report summarizes results of a subsequent survey of only those learners who completed *all* the courses in their programs and were eligible to earn the culminating MicroMasters credential or Specialization certificate. This survey is intended to assess what benefits transpired in reality and what costs were incurred rather than anticipated. It is worth remarking that, to date, we have collected over 18,000 beginning-of-program surveys across 10 programs but, 30 months after the first surveys were completed, we have collected only a few hundred end-of-program surveys. No doubt, this reflects both historically low completion rates of MOOCs and low interest in responding to surveys after successfully graduating from a program. However, the small sample size for the end-of-program survey results should be kept in mind when interpreting the results of the end-of-program survey.

### Study Methods

*Research Question: Will MOOC-based alternative credentials bring learners career, financial, educational, or other benefits that outweigh the direct costs and opportunity costs of participation?*

The end-of-program data reported here are based on 262 survey responses collected between January 2018 and October 2019 from completers in five Coursera Specializations (69% of the respondents) and five edX MicroMasters (31% of the respondents) offered by public and private universities in the United States. The Specializations were in business and finance topics and the MicroMasters were in social science, computer science, information science, and business and management topics.

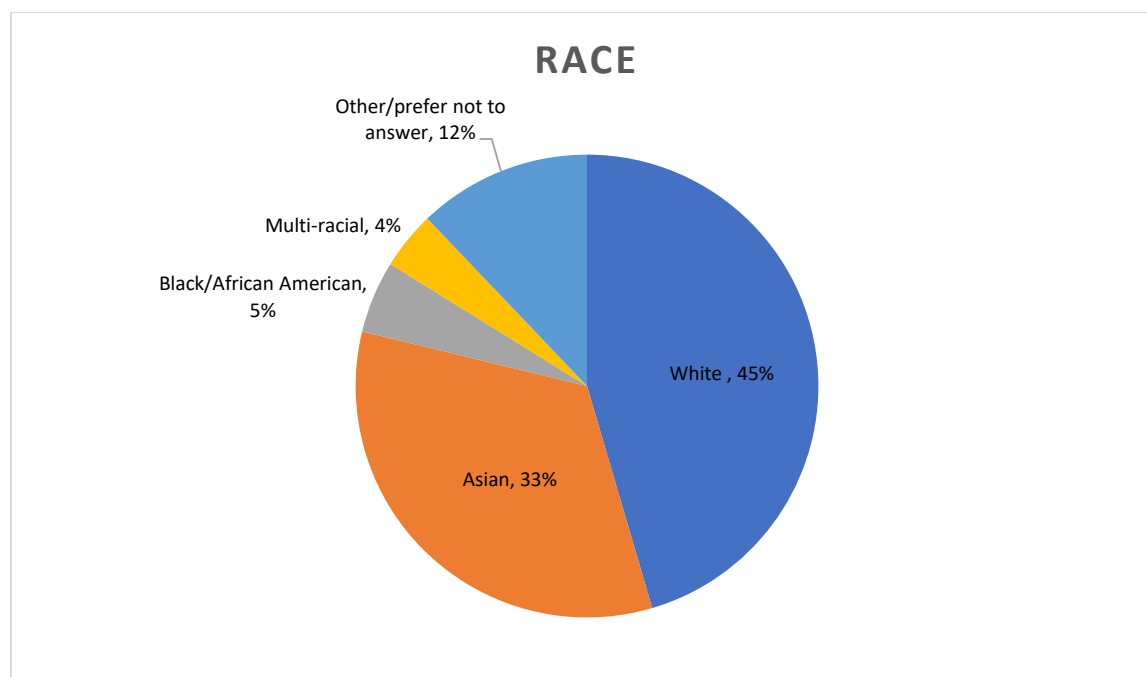
A link to the survey was embedded in the last course of the series or in every course if there was no set sequence. In addition, we sent a link to the survey by email to 1,100 learners from one of the MicroMasters. These participants had completed a beginning-of-program survey and agreed to follow-up contact for research purposes. The survey link was sent only to learners who had completed the beginning-of-program survey on or before July 31, 2018 in order to allow at least 14 months for completion of courses. Email invitations were sent up to three times between August and September 2019 and the response rate was 6%. However, 55 of these respondents had not yet completed the program and were consequently excluded from the study. Among these, 57% expected they would complete within the next 6 months, 38% in 6-12 months, and 5% expected to take more than a year. Unless otherwise noted, we report percentages based on the number of respondents to each relevant question.

## Findings

### *Who Were the Completers?*

*Demographics:* Across all programs, 44% of the completers were female and 56% were male. The average age was 36<sup>2</sup>. Eleven percent of the completers were Hispanic. Almost 80% were White or Asian (Figure A). As observed in the previous report, race categories used in the U.S. are not always applicable in a global context.

*Figure A. Completers' Race Across All 10 Programs*



While completers across all programs lived in 51 countries, the largest concentrations were in the United States (31%) followed by India (8%) and Canada (5%). Specializations completers were more likely to live outside the U.S. than MicroMasters completers and came from 42 countries. Differences in demographics between MicroMasters and Specializations completers are shown in Table 1.

MicroMasters completers were more likely to be male and residents of the U.S. compared with Specializations completers. The age range for MicroMasters completers was narrower than for Specializations completers.

<sup>2</sup> We used the year 2019 to calculate age from respondents' year of birth.

Table 1. Demographics of Specialization and MicroMasters Completers

Characteristic	Combined sample	Specializations	MicroMasters
Female	44%	48%	35%
Male	56%	52%	65%
Average age (years)	36	36	37
Youngest (years)	15	15	23
Oldest (years)	79	79	64
Hispanic	11%	10%	13%
White	45%	44%	47%
Asian	33%	35%	31%
Black/African American	5%	6%	3%
Multiracial	4%	4%	4%
# of countries in which participants lived	51	42	29
Most common countries of abode	U.S. (31%) India (8%) Canada (5%)	U.S. (29%) India (9%) Brazil/Canada (5%)	U.S. (36%) India (7%)

*Current Knowledge/Skill Level:* Thirty-two percent of the completers claimed to have advanced or expert knowledge in the course topic and 47% claimed intermediate-level knowledge. Only 21% indicated that they were beginners in the subject. Participants in the 10 programs also claimed to have strong English skills with 60% being fluent, 36% either very good or intermediate and only 4% reporting a basic or weak grasp of the language.

Thirty-four percent of completers had not completed any online courses prior to the MicroMasters or Specialization, 35% had completed one or two online courses, 16% had completed 3-7 online courses, and 14% had completed 8 or more.

*Highest Level of Education Completed (Figure B):* In general, learners were quite well educated with 85% holding at least an undergraduate degree and 47% a graduate degree. On the other hand, 13% of participants across all programs had no degree at all, although more than half of these individuals had completed some university or college courses. Specializations completers were less likely than MicroMasters completers to hold a college degree.

*Plans for Further Education:* Forty-seven percent of the completers indicated that they planned to pursue a further degree program while 33% were undecided about this and 21% were not planning to pursue a further degree. Among those indicating what type of further degree they would pursue (n=111), 59% indicated a Master's degree, 18% a Bachelor's degree, 13% a doctorate, 7% a professional degree and 4% an Associate's degree. The most common further degrees planned were Master's in Business Management and Administration (23%) or in Information and Data Science (10%).

Figure B. Highest Level of Education Completed

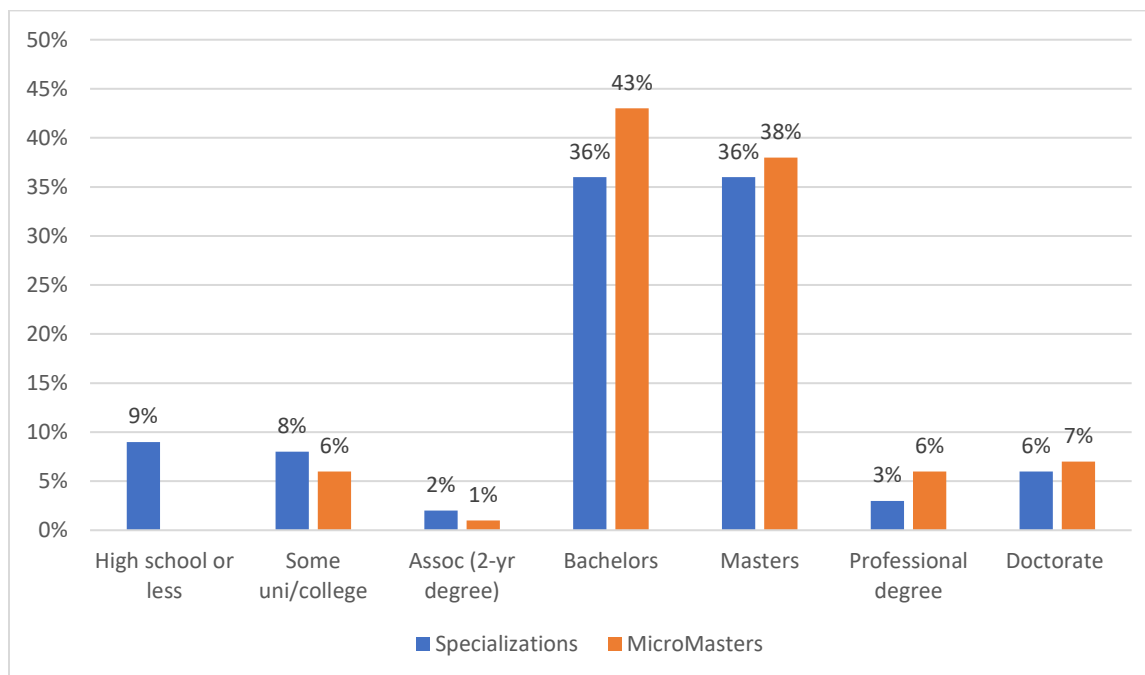
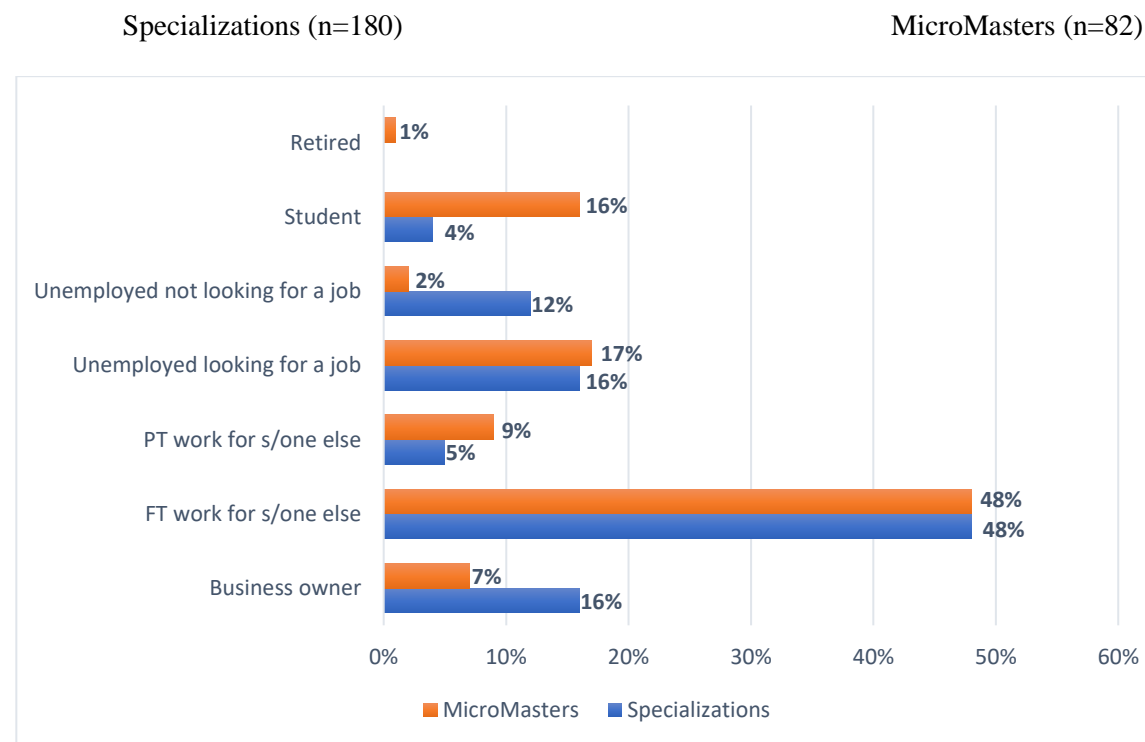


Figure C. Employment Status



Note. FT = full time; PT = part time; s/one = someone

*Employment Status:* Forty-eight percent of all completers worked full-time for someone else. Professional fields pursued by completers included finance (16%); information technology (10%); business management and administration (9%); science, technology, engineering and mathematics (9%); marketing, sales and service (8%); teaching or education research (7%); education administration (6%); and non-profit management and administration (6%).

Specializations completers were more likely than MicroMasters completers to be business owners, students, or unemployed and not looking for a job (see Figure C).

*Total Annual Income:* Base annual salary amounts for completers were reported between zero and \$500,000, with a median of \$50,000. Forty percent expected to receive an additional bonus. The median annual income<sup>3</sup> of Specializations and MicroMasters completers was \$55,000 and \$45,500 respectively. Specializations completers reported a higher average income even though MicroMasters completers were more likely to hold undergraduate and graduate degrees; be White and male; and live in the U.S. Specializations completers were, however, more likely to be business owners. U.S.-based completers earned a median income of \$92,500, much higher than the median annual income across the United States (reported as \$61,937 in 2018 by the [U.S. Census Bureau](#)).

### **Reported Benefits of Taking the Courses**

*Table 2. Reported Benefits of Completing a MicroMasters (MM) or a Specialization (Sp)*

Benefit Reported	% of all completers	% of Sp completers	% of MM completers
Learned something new	90%	91%	89%
Improved performance in current job	38%	39%	35%
Improved my English	22%	21%	26%
Networked with other professionals in this field	16%	17%	13%
Helped me start my own business	15%	<b>20%</b>	<b>4%</b>
Improved application to a first job	11%	<b>7%</b>	<b>18%</b>
Improved application to a new job at different employer	10%	9%	12%
Improved application to a formal degree program	9%	<b>7%</b>	<b>19%</b>
Helped in being moved to different job at same employer	7%	6%	7%
Improved my application to a formal degree other than related MA at same university offering MM or Sp	7%	7%	7%
Helped me get a pay raise	6%	6%	5%
Helped me get a bonus	6%	7%	2%
Supplemented a formal degree program	5%	<b>2%</b>	<b>12%</b>
Important to my employer in getting first job	3%	3%	5%
Helped me get a job promotion	4%	4%	2%
Improved application to formal degree other than related MA at other university	3%	2%	6%

*Note.* The first column in this table represents responses out of the full sample of 262 respondents. The next 2 columns report percentages out of 180 Sp respondents and 82 MM respondents respectively. Numbers in bold indicate a statistically significant difference between Sp and MM.

<sup>3</sup> We asked for annual salary, commissions, bonuses and total income, all in U.S. dollar amounts.

Almost all completers (90%) reported having learned something new as a result of completing the MicroMasters or Specialization (See Table 2). The next most common benefit reported was improving performance in the completer's current job (38%), followed by improving their English (22%). Other benefits reported by 10% or more of the completers were: networking with other professionals, starting a business and improving an application to a first job or to a new job at a different employer.

Specializations completers were more likely to report that the program helped with starting their own business (20%) although this should not be surprising given these courses were all in business and finance topics. MicroMasters completers were more likely to report that the program improved their applications to a formal degree program (19%) or supplemented a formal degree program in which they were concurrently enrolled (12%).

Seven percent of the MicroMasters learners indicated that completing the program had improved their application to the full, related Master's program.

### ***How Much are the Fees to Earn a Credential and Who Paid Them?***

Although some of the individual courses in these programs can be taken for free (i.e., audited), participants must pay a fee or request financial aid in order to earn a MicroMasters or Specialization credential. Specializations are priced at \$39-\$89 per month, totaling a few hundred dollars per program depending upon amount of time to completion. MicroMasters are fixed price. Across all 57 MicroMasters programs currently offered on the edX platform, the price range is between \$320 and \$1500, averaging \$972. There was one particularly assiduous learner in our sample who claims to have completed an entire Specialization in 19 hours during a 7-day free trial period.

- Overall, MicroMasters are more costly than Specializations.
- Across all programs, 64% of the learners paid the course fees themselves while 16% received financial aid from platform providers. Employers paid the fees for 13% of completers and contributed towards the fees of another 2%.
- 92% of completers studied for these programs during unpaid time but 4% were paid by their employers for all their study time and another 4% were paid for some of their study time.
- A variety of employers paid for the MicroMasters and Specialization fees and/or paid employees for some or all of their study time. These included companies in the fields of banking, insurance, telecommunications, therapeutics, biotech, and music. Other types of employers included government agencies, universities, a foundation and a professional organization.
- 20% percent of Specializations completers received financial aid from the platform provider (Coursera) compared with 9% of MicroMasters participants.

Notably, 10% of completers, across all programs, were asked by their employers to take the courses. (12% of Specializations completers and 5% of MicroMasters completers).

Figure D. Who Paid Course Fees

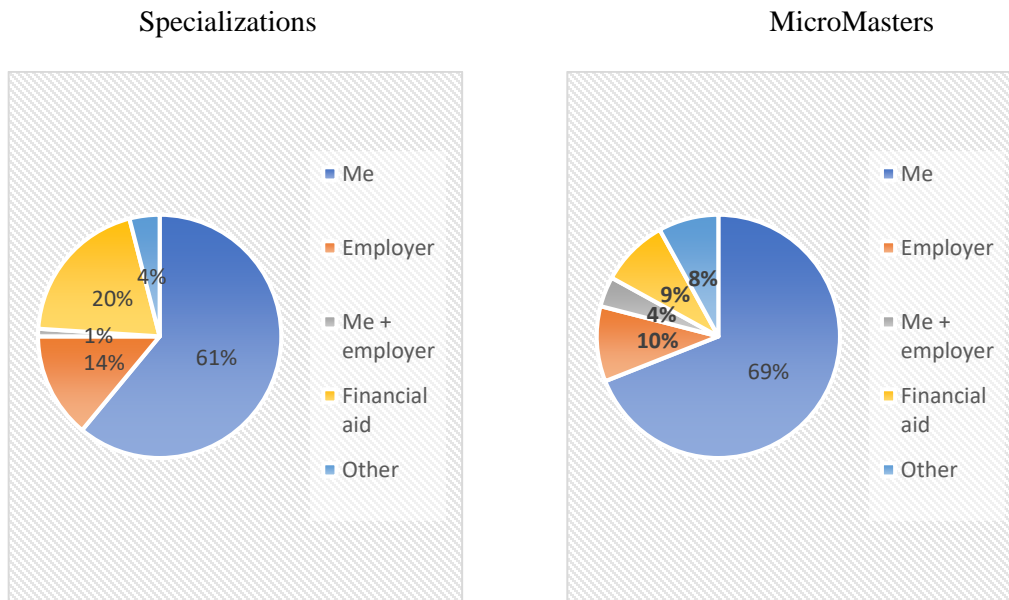
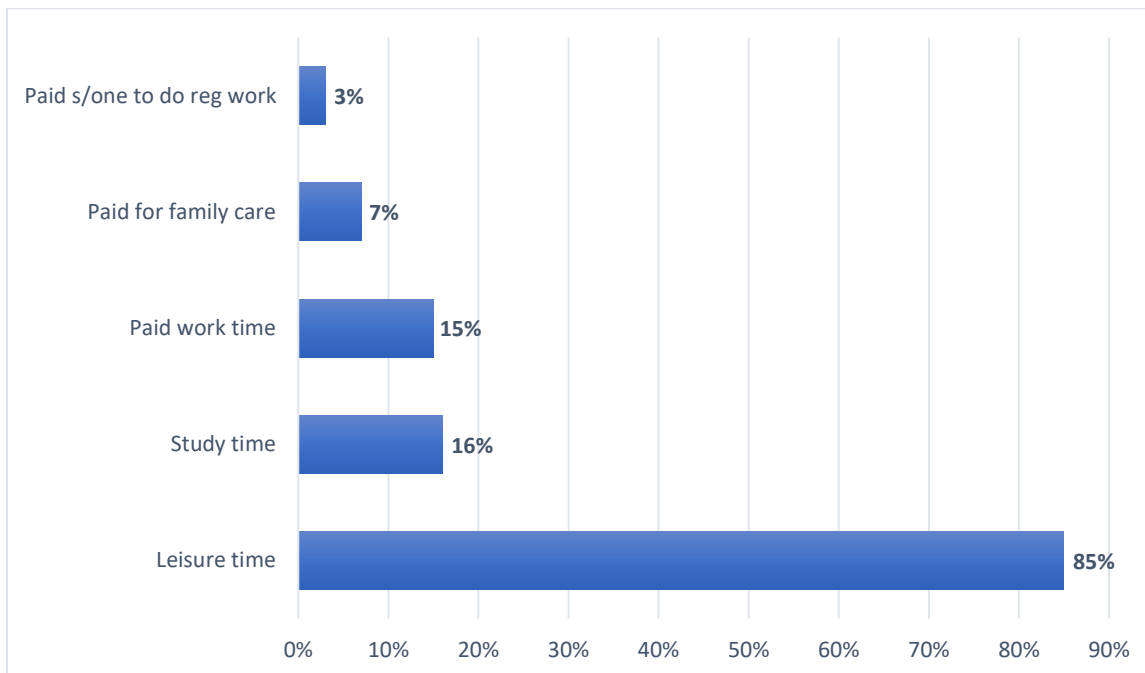


Figure E. What Completers Gave up in Order to Work on Courses



Note. s/one = someone; reg = regular



### *Opportunity Costs*

Most participants in both Specializations and MicroMasters gave up unpaid leisure time to work on the courses, but 15% gave up paid work time (See Figure E). Sixteen percent gave up study time in a formal degree program. Notably, 10% accrued additional costs by either paying for family care (7%) or paying someone else to do the work for their regular paid job (3%).

Across all programs, completers spent an average of 9 hours per week on the courses and an average of 13 weeks. Learners reported spending as little as one hour per week and as many as 50 hours per week on the courses, but the mode was 4 hours per week. Effort was generally greater for the MicroMasters programs with completers reporting an average of 10 hours per week over 26 weeks, compared with 9 hours per week over 7 weeks for Specializations.

Three quarters of the completers indicated completing their program in 12 weeks or less, with some claiming to have completed a Specialization in a single week. The remaining 25% took between 14 and 100 weeks to complete their programs.

### **Beginning-of-Program Respondents vs. Completers: A Comparison**

- Compared to the learners who responded to the beginning-of-program survey, completers were more likely to:
  - Be male (56% vs. 49%), and White or Asian (78% vs. 65%).
  - To report being experts or advanced in the subject matter of their programs (32% vs. 7%).
  - To report having intermediate level knowledge of the subject matter of their programs (47% vs. 35%).
- Only 26% of the beginning-of-program respondents expected to learn something new while 90% of completers indicated that they had learned something new from the program.
- 27% of the beginning-of-program respondents expected the program would help them start a business but only 15% of completers reported this as a benefit of completing the program.
- Completers reported spending an average of 9 hours per week on their coursework compared with the 6.5 hours per week anticipated by the beginning-of-program respondents.
- Median income of completers was substantially higher than for the population of learners who answered the beginning-of-program survey, \$50,000 vs. \$35,000. We cannot assert that the credential led to higher income as it may be the case that higher earners are more likely to complete their programs.

**In conclusion,** it appears that MicroMasters and Specializations programs are providing relatively low-cost and flexible professional development to mostly well-educated participants. Those who complete the programs almost invariably claim to have gained new knowledge and almost 40% believe the programs improve their job performance. However, the apparently low program completion rates likely reflect that most learners do not perceive the benefits to outweigh the costs. If more employers show willingness to cover the costs and to reward completers financially or with promotions, this perception should change.

**Benefits and Costs of MOOC-Based Alternative Credentials*****Key Takeaways***

- A typical MicroMasters or Specialization completer is well-educated, employed, White or Asian, and 36 years old.
- The largest concentrations of completers are in the United States and India.
- Almost all completers have at least an intermediate level of English, with 60% being fluent.
- Most completers reported at least an intermediate level of knowledge of the subject matter of their programs, with almost one third claiming expertise. In contrast, over half of the respondents to the beginning-of-program survey indicated they were beginners in the subject.
- Approximately two thirds of the completers had completed one or more online courses prior to the current program.
- 85% of completers already held a Bachelor's degree and 47% already held a graduate degree.
- Almost half of the completers indicated that they planned to pursue a further degree program.
- Almost half of the completers worked full-time for an employer and 13% owned businesses.
- Median annual income across all completers was \$50,000 and \$92,500 for those in the U.S.
- 10% of completers, across all programs, were asked by their employers to take the courses.
- The most common benefits reported from completing the MicroMasters or Specializations were: learning something new (90%), improving performance in the completer's current job (38%), and improving English (22%).
- Other benefits reported by 10% or more of the completers were: networking with other professionals, starting a business, and improving an application to a first job or to a new job at a different employer.
- 7% of the MicroMasters learners indicated that completing the program had improved their application to the full, related Master's program.
- 64% of the learners paid the course fees themselves while 16% received financial aid from platform providers.
- Employers paid the fees for 13% of completers and contributed towards the fees of another 2%.
- 92% of completers studied for these programs during unpaid time but 4% were paid by their employers for all their study time and another 4% were paid for some of their study time.
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**Suggested citation:**

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