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Preliminary Report: Archaeology Education in Southeast Asia

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Abstract

This report presents the preliminary results of the SEAMEO SPAFA Survey on Archaeology Education in Southeast Asia which was conducted online from September to December 2018. The aim of the survey was to understand the archaeology education landscape in Southeast Asia and identify the current needs in archaeology education and skills training. 330 people responded to the survey, which was available in multiple languages. These initial results outline where archaeologists in the region studied archaeology; public perceptions of archaeology education in the region; an overview of the archaeology profession and industry and the main training needs identified by those studying or working in Southeast Asian archaeology today.

Keywords: archaeology, education, Southeast Asia, survey, SEAMEO SPAFA

Introduction

The Southeast Asian Ministers of Organization Regional Centre for Archaeology and Fine Arts (SEAMEO SPAFA) Survey on Archaeology Education in Southeast Asia is part of a multi-year project (2018/19 - 2020/21) to understand the current and emerging capacity needs in the field of Southeast Asian archaeology, with a focus on training, curriculum planning and developing future collaborations with and between

education institutions. This project is in line with SEAMEO Priority Area #6: Promoting Harmonisation in Higher Education and Research. For the first part of the project, the centre commissioned an online survey from September - December 2018 to understand how archaeology is taught in Southeast Asia and to develop a baseline in understanding archaeology education in the region today.

This research is the first of its kind to survey and document the education landscape for archaeology in Southeast Asia. The broad objectives of this survey were:

- To understand where Southeast Asians go to study archaeology, particularly in the context of higher education. Related to this question is where did the current cohort of archaeologists and heritage professionals go for their archaeology education?
- To identify the main institutions (archaeology departments) teaching the archaeology of Southeast Asia, both within Southeast Asia and outside the region.
- Assess the public perceptions about where Southeast Asians would go to study archaeology inside and outside of the region.
- Identify emergent and current training needs.
- Provide a snapshot of the archaeology industry and archaeology-related professions.

Part of the survey was based on a longitudinal study on the Australian Archaeology profession by Mate and Ulm (2016) which provided a good starting point for creating this survey. The results presented in this report was initially presented at the Consultative Meeting on Archaeology Education in Southeast Asia held in Bangkok on 21 June 2019, and published in the SPAFA Journal[1] as a means to solicit feedback on the initial findings and for future editions of the survey. A fuller report is in preparation and intended for dissemination in the near future.

Key Findings

- 330 respondents with a slightly higher female population (56%) than male. More than half (60%) of the respondents were between 21 and 40 years old. A smaller subset of this population was further defined as people who had obtained (or are obtaining) some sort of formal archaeology education and/or are employed in an archaeology related field in 2018. This group of 171 people is also comprised of slightly more women than men (56%). The gender proportion is similar in both populations.
- The top five Southeast Asian universities identified for expertise in archaeology were: Silpakorn University (Thailand), the University of the Philippines (Philippines), Universiti Sains Malaysia (Malaysia), Universitas Gadjah Mada and Universitas Indonesia (both Indonesia). A third of respondents could not identify any university in Southeast Asia that was known for archaeology education. Additionally, the National University of Singapore was often erroneously identified as an institution for archaeology education.

[1] The author is the managing editor of the SPAFA Journal. Clearance from members of the editorial board was sought to publish these results in the journal.

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- Outside of Southeast Asia, three institutions stood out among respondents for expertise in Southeast Asian archaeology. SOAS (UK), the Australian National University (Australia) and the University of Hawaii at Manoa (USA).
- A third of the respondent population studying archaeology or possessing an archaeology qualification were pursuing doctoral studies or had a PhD. Another third was working towards their master's degree or had an MA qualification. 66% of current students cited institutional reputation as a factor in choosing their current university.
- 56% of the respondents indicated that they intended to undertake, or considering, formal archaeology education in the next two years. 40% of these respondents intended to pursue a master's degree while 23% were considering a PhD. A third of these respondents indicated wanting to do a tertiary, non-degree qualification such as a certificate programme, which is lacking in the region.
- 78 respondents reported being employed in an archaeology-related position in 2018. Three quarters of these respondents were Southeast Asian nationals, and most of them were working in Southeast Asia. 75% of these respondents reported possessing an archaeology degree. The majority (62%) of these respondents have been employed for less than 10 years. Men were employed in full-time positions 85.7% of the time, compared to women at 69.1%.
- The majority (80%) of jobs for the respondents employed in archaeology are in the university and government sector.
- Among respondents who are involved in archaeology in 2018, the top training needs are in Conservation of Artefacts (in-situ or post-excavation), conducting Heritage Impact Assessments, English Language Skills, Dating techniques, and Photography.

Respondent Profile

A total of 330 people completed the survey that administered online through Google Forms (see supplementary material). Depending on the respondent profile, the survey branched into different lines in inquiry depending on whether the respondent was in possession of an archaeology qualification, and/or was working in an archaeology-related field.

Respondents were solicited through several channels such as SEAMEO SPAFA's website and social media, through the Southeast Asian Archaeology Newsblog, and from direct email solicitations disseminated through the Governing Board Members of SEAMEO SPAFA and the mailing list of the 3rd SEAMEO SPAFA International Conference on Southeast Asian Archaeology. Flyers were also distributed at the 21st Congress of the Indo-Pacific Prehistory Association held in Hue in September 2019, a major regional archaeology conference which saw the attendance of over 700 participants from around the world. There were slightly more female (56%, 185 people) respondents than males (44%, 145 people), and more than half (60%) of the respondents were between 21 and 40 years old (Figure 1).

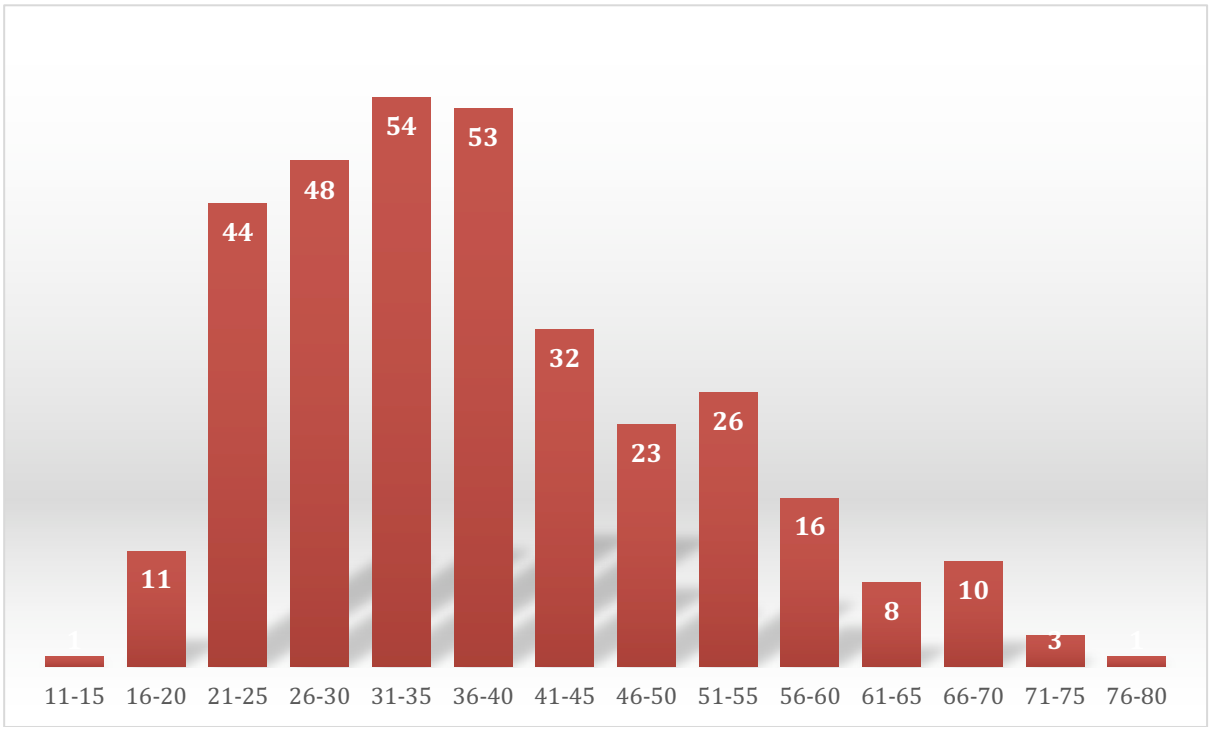

Fig. 1 Distribution of respondents by age. 60% of respondents were between 21-40 years old. Source: SEAMEO SPAFA

In order to extend the reach of the survey towards Southeast Asians, special effort was made to translate the survey into Myanma, Thai, Khmer, Bahasa Indonesia and Bahasa Malaysia. 39% of respondents answered the survey in a non-English language with Bahasa Indonesia and Thai each representing 11% of the total responses followed by Bahasa Malaysia (6%) and Vietnamese (5%) (Figure 2). A copy of the survey instrument and its translations is available in the supplementary material associated with this paper.

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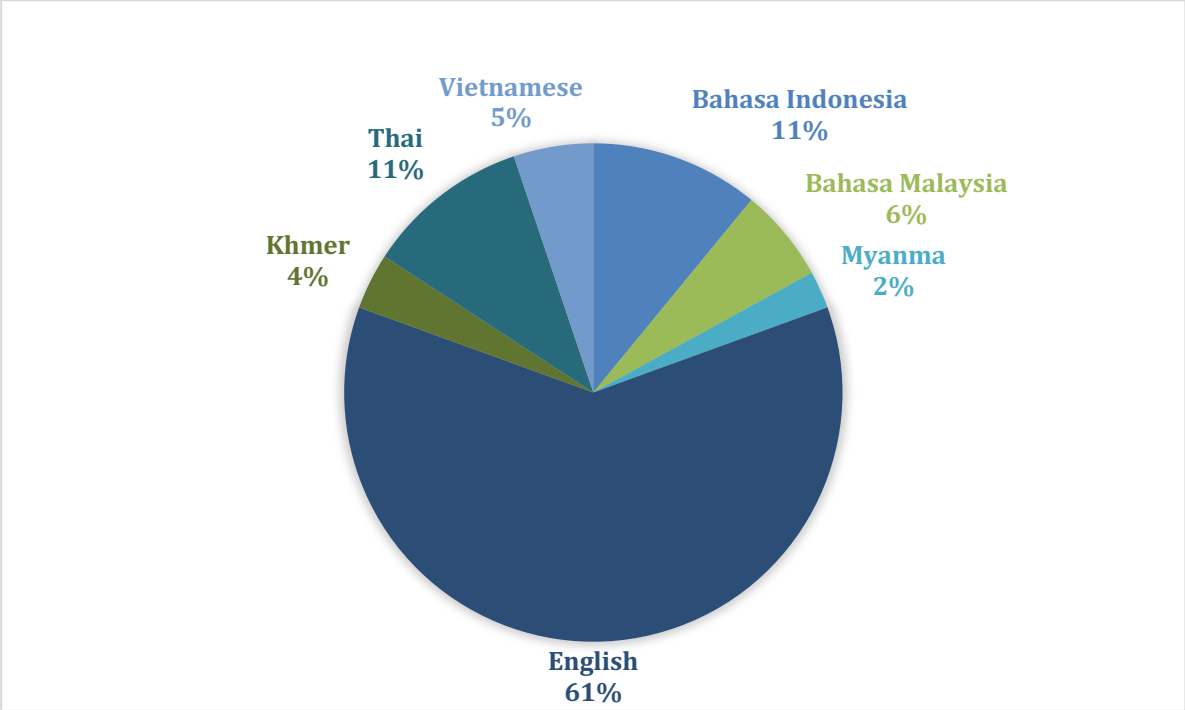

Fig. 2 Distribution of respondents by language. Source: SEAMEO SPAFA

In total, 286 or 87% of respondents identified themselves as Southeast Asian Nationals. The remaining respondents came from other Asian countries, Australia, Europe and the US. It is important to note that representation within Southeast Asia was uneven: 21% of respondents came from Singapore or Brunei, two countries that do not offer any formal education in archaeology education and have substantially less archaeological capacity compared to other countries in the region. Additionally, there were no respondents from Lao PDR or from Timor Leste (Figure 3). A similar proportion of respondents identified themselves as a resident of a Southeast Asian country (Figure 4). Of course, there is an element of self-selection bias in this survey, since due to the nature of this survey respondents would likely have had an interest in the archaeology of Southeast Asia.

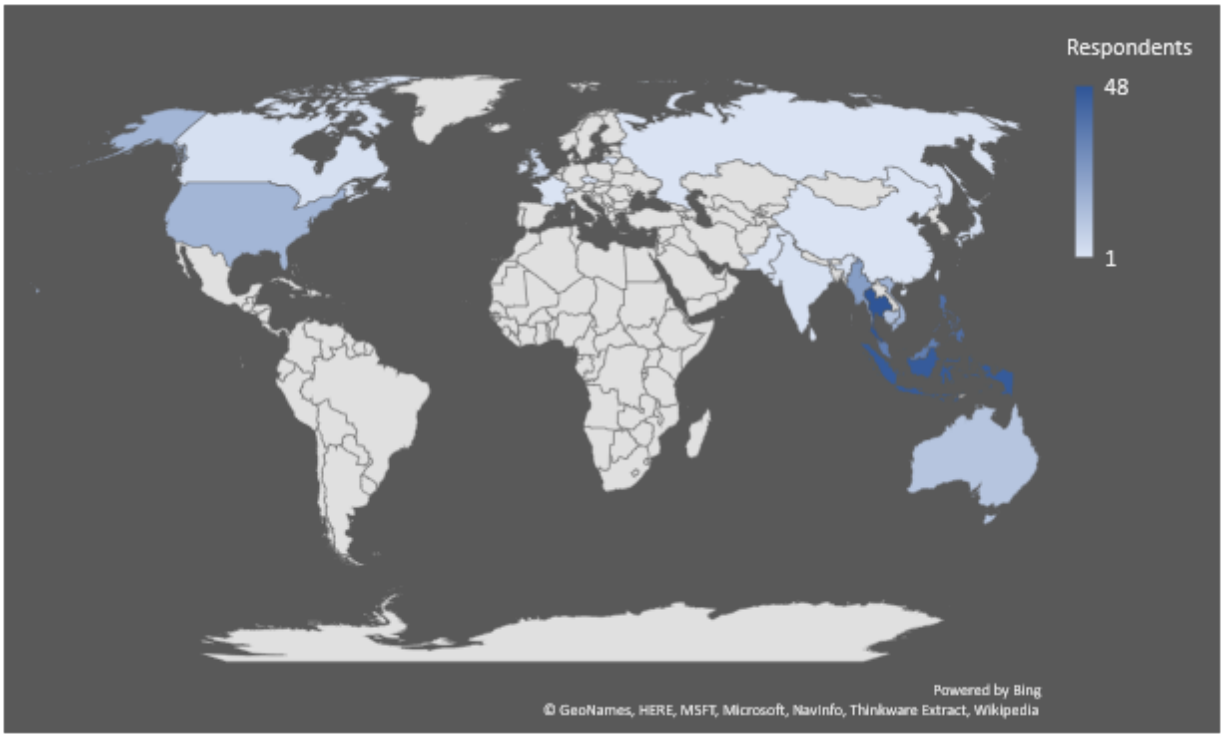

Fig. 3 Distribution of respondents by nationality. 87% of respondents identified as Southeast Asian Nationals. Source: SEAMEO SPAFA

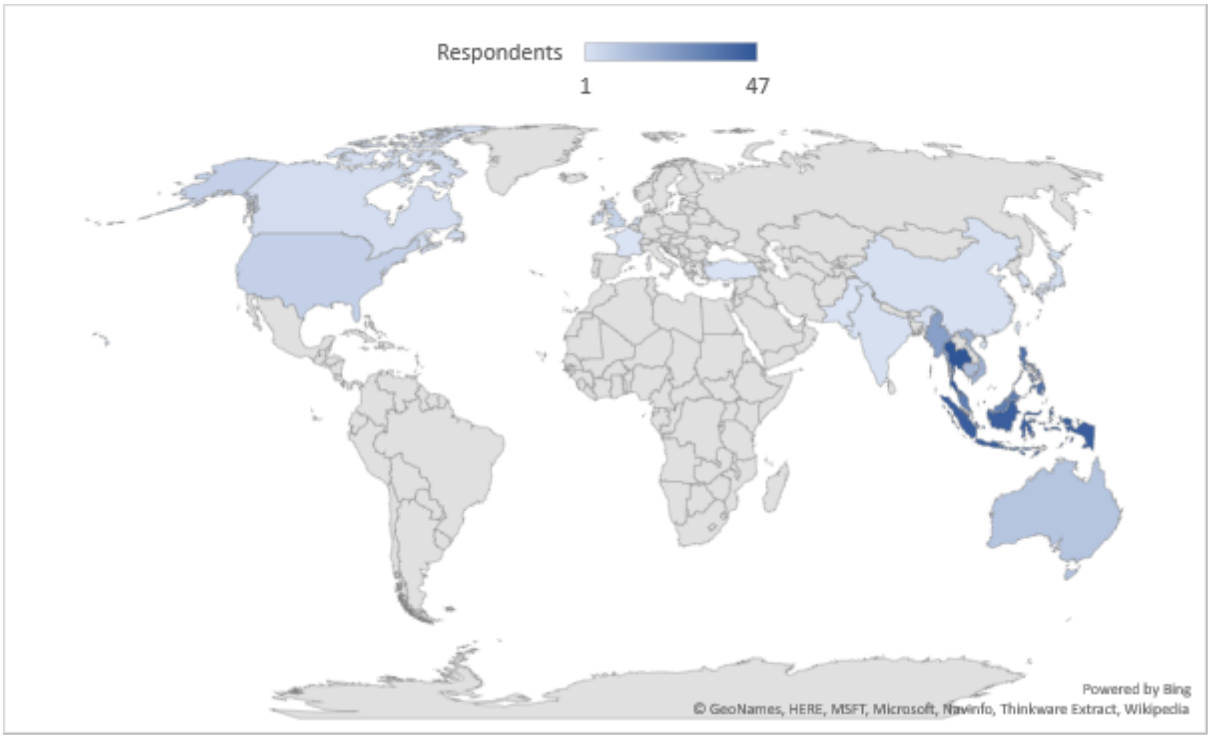

Fig. 4 Distribution of respondents by residence. A similar 87% of respondents identified as resident of a Southeast Asian country in 2018. Source: SEAMEO SPAFA

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Respondents can be further categorized into whether they received formal education in archaeology, and whether they work in an archaeology or cultural-heritage related field (Figure 5).

Education	Respondents	Employment	Respondents
No Formal Education in Archaeology	198 (59%)	Not working in archaeology	209 (63%)
Formal Education in Archaeology	100 (30%)	Working in archaeology field	78 (24%)
Current Student in Archaeology	36 (11%)	Working in cultural heritage (not archaeology)	42 (13%)

Fig. 5 General characteristics of respondents by education qualification in archaeology and employment in an archaeology-related field. Source: SEAMEO SPAFA

The largest group of people (approximately 48%) were respondents who identified themselves as having no formal academic qualification in archaeology AND also not working in an archaeology-related field. This group were characterized as "the general public" whose opinions served as the public baseline for knowledge about archaeology education in the region.

There is some overlap for the other 52% of respondents, who have or are undergoing some sort of formal archaeology education and/or are working in an archaeology or cultural-heritage related field. It should be noted that the number proportion of people working in an archaeology related field is less than one-quarter of the total respondents (24%). However, another 13% of respondents are identified as working in some sort of cultural heritage field that is not archaeology. It can be observed that some respondents who do not have a formal archaeology education also end up working in archaeology.

Knowledge of Education Institutions teaching Archaeology in Southeast Asia

A key question for this study was to identify the main institutions for archaeology education in Southeast Asia, inside and outside of the region. The general assumption is that current students and respondents who have a qualification in archaeology would be better able to identify the main institutions involved; and that this can be compared to the responses from the general public.

Institutions within Southeast Asia

From the aggregate response, eight out of the top ten answers were correctly identified as institutions in Southeast Asia that taught archaeology. Silpakorn University, the University of the Philippines Archaeological Studies Program and Universiti Sains Malaysia (Centre for Global Archaeological Studies) were correctly identified among 14-18% of respondents. National University of Singapore was erroneously identified as an institution offering archaeology among 14% of

respondents and ranked as #5. The university of "I Don't Know" was the most popular response, accounting for 37% of responses.

A total of 70 institutions in Southeast Asia were suggested by respondents as places that people could go to study archaeology, while in fact the actual number is 18 (Figure 6). As expected, respondents are more knowledgeable about the institutions of the country of nationality or residency than outside.

Response	Country	Count	Comment
Don't know	n/a	121	
Silpakorn University	Thailand	61	4 specified Faculty of Archaeology
University of the Philippines	Philippines	50	21 specified UP Diliman / UP ASP
Universiti Sains Malaysia	Malaysia	47	
Universitas Gadjah Mada	Indonesia	39	
Universitas Indonesia	Indonesia	33	
Royal University of Fine Arts	Cambodia	28	
Universitas Udayana	Indonesia	16	
Yangon University	Myanmar	15	
Vietnam National University Hanoi, University of Social Sciences & Humanities, Faculty of History	Vietnam	14	5 specified University of Social Sciences and Humanities
Universitas Hasanuddin	Indonesia	9	
Universitas Jambi	Indonesia	8	
Universiti Malaya	Malaysia	8	No formal archaeology programme
University of Mandalay	Myanmar	8	
Yadanarbon University	Myanmar	8	
Dagon University	Myanmar	6	
Universitas Halu Oleo	Indonesia	6	
Universiti Kebangsaan Malaysia	Malaysia	6	
National University of Lao PDR	Lao PDR	3	
Field School of Archaeology, Pyay	Myanmar	1	
National University of Singapore	Singapore	45	No formal archaeology programme One identified The Department of Southeast Asian Studies, under the Faculty of Arts and Social Sciences
Vietnam National University Ho Chi Minh City	Vietnam	10	4 specified University of Social Sciences and Humanities
Chulalongkorn University	Thailand	9	No formal archaeology programme
Chiang Mai University	Thailand	7	
Vietnam National University	Vietnam	7	The VNU university is very large, unable to tell if the respondents are referring to a specific programme
Institute of Archaeology, Hanoi	Vietnam	5	Not a teaching institution
Nanyang Technological University	Singapore	5	No formal archaeology programme
Vietnam Academy of Social Sciences	Vietnam	5	

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Mahidol University	Thailand	3	
Hue University	Vietnam	2	
Institute of Southeast Asian Studies in Singapore	Singapore	2	Not a teaching institution
Royal University of Phnom Penh	Cambodia	2	No formal archaeology programme
Srinakharinwirot University	Thailand	2	
Thammasat University	Thailand	2	
Universitas Airlangga	Indonesia	2	
Universitas Padjajaran	Indonesia	2	
University of Diponegoro	Indonesia	2	
University of San Carlos	Philippines	2	
University of Santo Tomas	Philippines	2	
Andalas University	Indonesia	1	
Apsara Authority	Cambodia	1	Not a teaching institution
Bandung University	Indonesia	1	No formal archaeology programme
Bogor University	Indonesia	1	
Fine Arts Department of Thailand	Thailand	1	Not a teaching institution
Hanoi University of Culture	Vietnam	1	No formal archaeology programme
Indonesia University of Education (UPI),	Indonesia	1	
Institut Agama Islam Negeri Ar-Raniri	Indonesia	1	
Institute for Southeast Asia Archaeology	USA	1	Not a teaching institution
Jember State Islamic Institute (IAIN), Bengkulu	Indonesia	1	No formal archaeology programme
National Museum of Cambodia	Cambodia	1	Not a teaching institution
National Museum of History of Vietnam	Vietnam	1	
Philippine Normal University	Philippines	1	No formal archaeology programme
Royal Academy of Cambodia, Faculty of Archaeology,	Cambodia	1	
State Islamic Institute (IAIN)	Indonesia	1	
Thai Nguyen University of Sciences, Division of History	Vietnam	1	
Universitas Negeri Malang Jurusan Sejarah	Indonesia	1	
Universitas Negri Surabaya	Indonesia	1	
Universiti Brunei Darussalam	Brunei	1	
Universiti Malaysia Kelantan	Malaysia	1	
Universiti Pendidikan Sultan Idris Syah	Malaysia	1	
Universiti Putra Malaysia	Malaysia	1	
University of Cambodia	Cambodia	1	
University of Jakarta	Indonesia	1	
University of Nottingham Malaysia	Malaysia	1	
University of the Philippines - Davao City	Philippines	1	

University of the Philippines - Palawan	Philippines	1	
Walailak University	Thailand	1	

Fig. 6 Summarised perception of where respondents thought one could study archaeology in Southeast Asia. Institutions with faculties or department of archaeology are highlighted. Source: SEAMEO SPAFA

Institutions outside of Southeast Asia

Outside of Southeast Asia, respondents identified three clear frontrunners of institutions of education that have a specific focus on Southeast Asian archaeology: SOAS University of London (14%), the Australian National University (10%) and the University of Hawaii at Manoa (9%). The next 24 institutions were named more than three times but less than 14 times which at most constituted to 4% of the total responses. Some, but not all, of these remaining institutions have some historical or current research specialty in Southeast Asia and is more likely that their reputation is linked to the research agenda of specific people affiliated to these institutions (Figure 7). The remaining 58 institutions were identified once or twice; many of these institutions are 'big name' universities - either Ivy League or locally significant - and may simply reflect general reputation rather than a specific strength in Southeast Asian Archaeology.

Institution	**Country**	**Count**
School of Oriental and African Studies - University of London	UK	45
Australian National University	Australia	34
University of Hawaii at Manoa	USA	30
University College London	UK	14
University of Washington	USA	14
Oxford University	UK	13
Otago University	New Zealand	11
University of California Los Angeles	USA	11
Cambridge University	UK	9
Cornell University	USA	8
Leiden University	Netherlands	8
University of Pennsylvania	USA	8
University of Sydney	Australia	8
Harvard University	USA	6
University of California Berkeley	USA	6
University of Chicago Illinois	USA	6
University of Michigan	USA	6
University of Oregon	USA	6
Flinders University	Australia	5
Sophia University	Japan	5
University of Wollongong	Australia	5
James Cook University	Australia	3

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Peking University	China	3
Sorbonne	France	3
University College Dublin (Ireland)	Ireland	3
University of Bradford	UK	3
University of Wisconsin at Madison	USA	3
Columbia University	USA	2
EFEO	France	2
Griffith University	Australia	2
Kyoto University	Japan	2
National Tsing Hua University	Taiwan	2
Sun Yat-sen University	Taiwan	2
University of Arizona	USA	2
Waseda University	Japan	2
Xiamen University	China	2
Yale University	USA	2
Archaeological Survey of India	India	1
Banaras Hindu University	India	1
Boston University	USA	1
Cardiff University	UK	1
Chinese University of Hong Kong	China	1
Delhi University	India	1
Durham University	UK	1
Granada University	Italy	1
Hull University	UK	1
IPH-French National Museum of Natural History	France	1
ISEAA	USA	1
La Trobe University	Australia	1
Lanzhou University	China	1
Michigan State University	USA	1
Moscow State University	Russia	1
Murdoch University	Australia	1
Nalanda University	India	1
NARA Japan	Japan	1
National Taiwan University	Taiwan	1
Newcastle University	Australia	1
Northwestern University	Australia	1
Pennsylvania State University	USA	1
Princeton University	USA	1
Quaid i Azam University	Pakistan	1
Sichuan University	China	1
Stanford University	USA	1
Tokyo University	Japan	1
Trent University	Canada	1

Tsinghua University	China	1
University of Adam Mickiewicz	Poland	1
University of British Columbia	Canada	1
University of Cairo	Egypt	1
University of Edinburgh	UK	1
University of Guam	USA	1
University of Leeds	UK	1
University of Leicester	UK	1
University of Manchester	UK	1
University of Missouri	USA	1
University of Mysor	India	1
University of New South Wales	Australia	1
University of Padova	Italy	1
University of Queensland	Australia	1
University of Sheffield	UK	1
University of Texas at Austin	USA	1
University of Western Australia	Australia	1
University of York	UK	1
Waikato University	New Zealand	1
Wuhan University	China	1

Fig. 7 Responses to where one could study Southeast Asian archaeology outside of the region. SOAS, ANU and U Hawaii were clear frontrunners. Source: SEAMEO SPAFA

Education Profile

Current Students of Archaeology

Of the 36 respondents who were studying archaeology at the time of the survey, a third were undertaking their doctoral degree, another third their master's degrees, while the final third were undergraduates or undertaking a non-certificate qualification. These students were studying at:

- Australian National University
- Cambridge University
- Flinders University
- Leiden University
- Mandalay University
- Sichuan University
- Silpakorn University
- SOAS
- Universitas Indonesia
- Universiti Malaysia Sabah
- Universiti Sains Malaysia
- University of New England
- University of Oxford
- University of the Philippines ASP

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- University of Toronto
- University of Yangon
- Vietnam National University Hanoi, University of Social Sciences & Humanities

23 (approximately 2/3) of these current students reported they did not consider going to any university other than the ones they were at. Of the reasons cited for choosing their university for study (Figure 8), the most commonly cited were institutional reputation (66%) and the receipt of a scholarship (42%). Three respondents (9%) said that they had no choice in the university they wanted to go to and notably these were Thai respondents where the instruction of archaeology is legally vested in Silpakorn University.

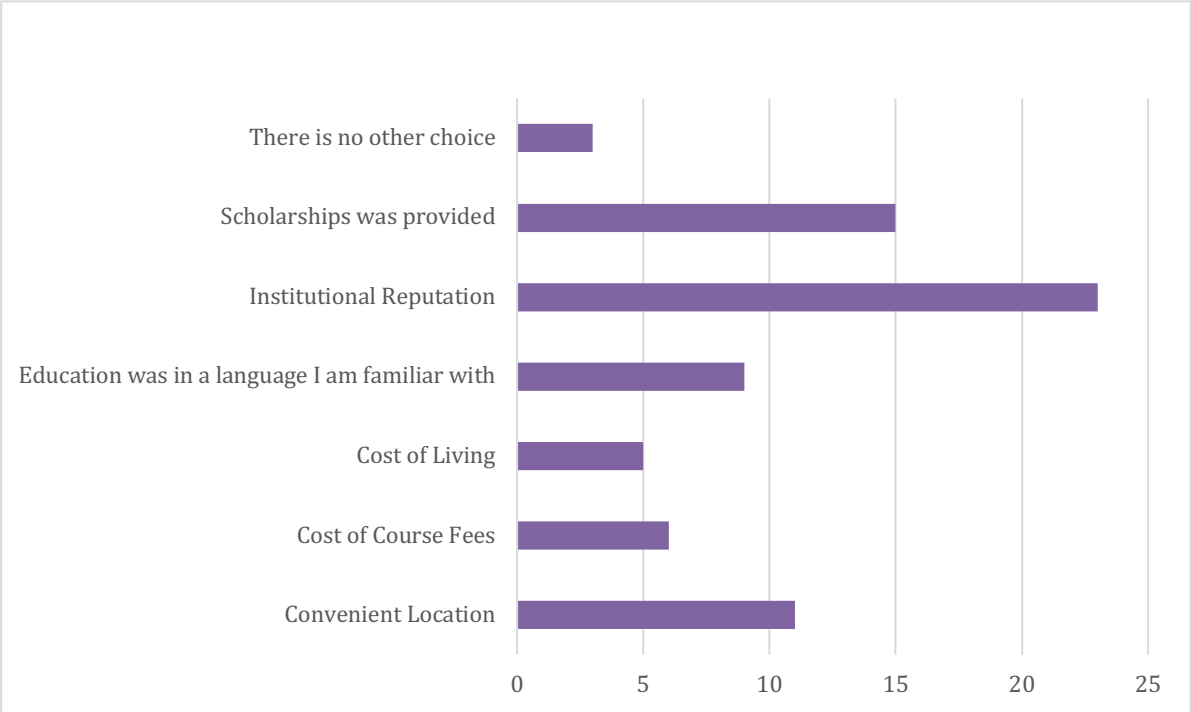

Fig. 8 Reasons cited by respondents who were students in archaeology at the time of the survey (n=36) on why they chose their university. Respondents could check more than one reason. Source: SEAMEO SPAFA

The majority (2/3) of these current students said they took courses related to the archaeology of Southeast Asia. Five students reported that they had the option of taking courses related to the archaeology of Southeast Asia but didn't, while seven students said there was no opportunity to study the archaeology of Southeast Asia in their universities. From these latter seven students, all but one is studying in an institution outside of Southeast Asia. Most (75%) of the students also reported having some sort of field training as part of their study; most of this field training also occurred in Southeast Asia.

Respondents with an Archaeology Qualification (a.k.a., Where did people go to study archaeology?)

As noted previously, 100 (or 30%) of respondents indicated that they had some formal education in archaeology, and they came from 45 countries (Figure 9). 70 of these respondents possessing an archaeology qualification were Southeast Asian nationals. A third of these respondents (n=31) hold a doctoral degree and a master's degree (n=34) while a quarter (n=27) an undergraduate degree.

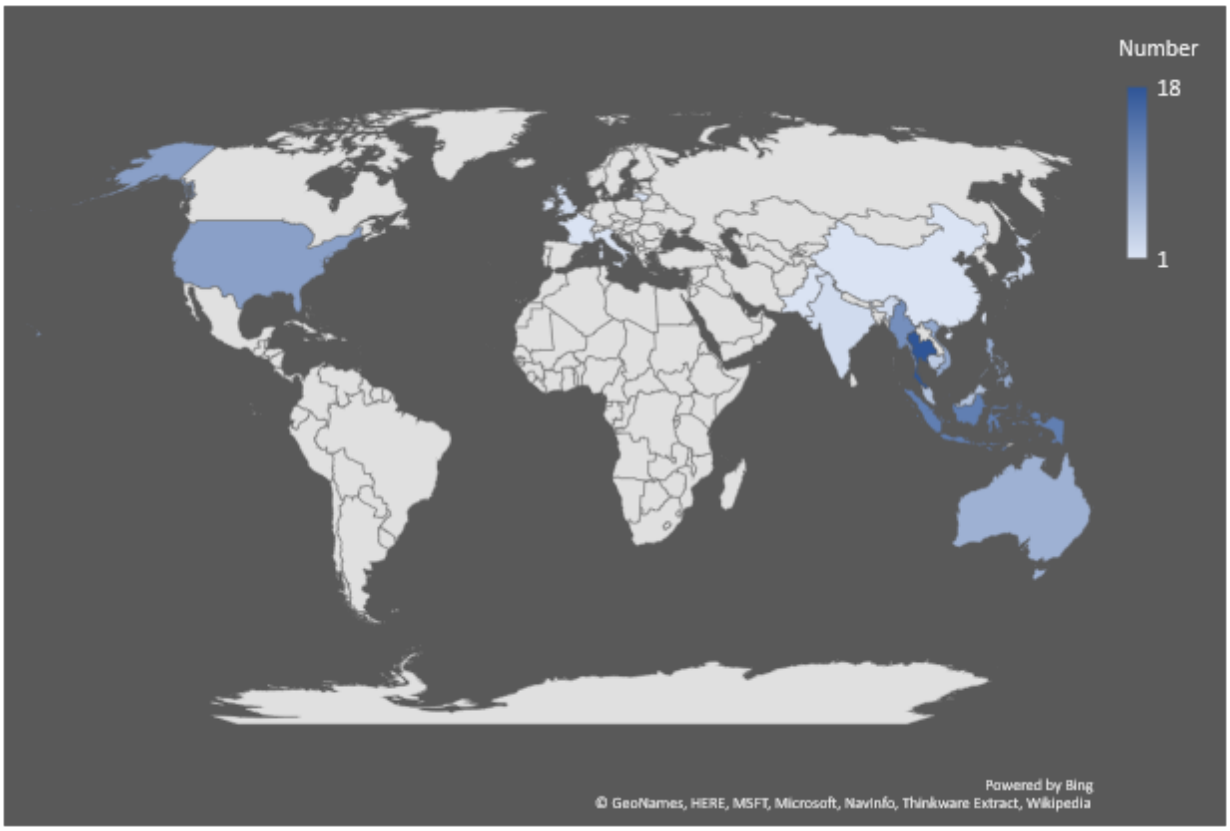

Fig. 9 Distribution of respondents (n=100) who possess an archaeology qualification. 70 respondents are Southeast Asian nationals, while the other respondents come from the US, Europe, Australia and other Asian countries. Source: SEAMEO SPAFA

The respondents from this group obtained their archaeology degree from the following institutions:

- Airlangga University
- Australian National University
- Banaras Hindu University
- Cambridge University
- Cornell University
- Durham University
- Durham University
- Flinders University
- Institute of Archaeology, Archaeological Survey of India
- Manado State University

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- National Museum Institute
- National Taiwan University
- National University of Singapore
- Peking University
- Royal University of Fine Art
- Silpakorn University
- SOAS
- Sophia University
- Stanford University
- UCL, Institute of Archaeology
- UCLA
- Universita' degli Studi di Padova
- Universitas Gadjah Mada
- Universitas Indonesia
- Université Paris IV Sorbonne-Nouvelle
- Universiti Sains Malaysia
- University of Arizona
- University of California, Davis
- University of Colorado, Boulder
- University of Florida
- University of Hawaii, Anthropology
- University of Karachi
- University of Mandalay
- University of Otago
- University of Sheffield
- University of Sydney
- University of Texas at Austin
- University of the Philippines
- University of Udayana
- University of Western Australia
- University of Yangon
- Vietnam Academy of Social Sciences, Institute of Archaeology
- Vietnam National University Hanoi
- Vietnam National University Hanoi, University of Social Sciences & Humanities
- Vietnam National University Ho Chi Minh City, University of Social Sciences & Humanities
- Vilnius University
- Waseda University
- Yadanarbon University

Some of the institutions listed here can also be found on the list of institutions in Figures 6 and 7, and it may be that some of these universities used to have a specialty or focus on Southeast Asia that no longer exists today. It may also be suggested that the people who already possess an archaeology degree come from a much more diverse background that those of current students.

Future or Potential students in Archaeology

More than half (186) of the respondents indicated that they will undertake or are considering undertaking formal archaeology education within the next two years. Master degrees were the most popular degrees that were identified, followed by tertiary non-degree qualifications such as postgraduate diplomas or certificate courses. About a quarter of respondents who reported interest in obtaining an archaeology degree in the next two years said they were interested in taking a doctoral degree (Figure 10).

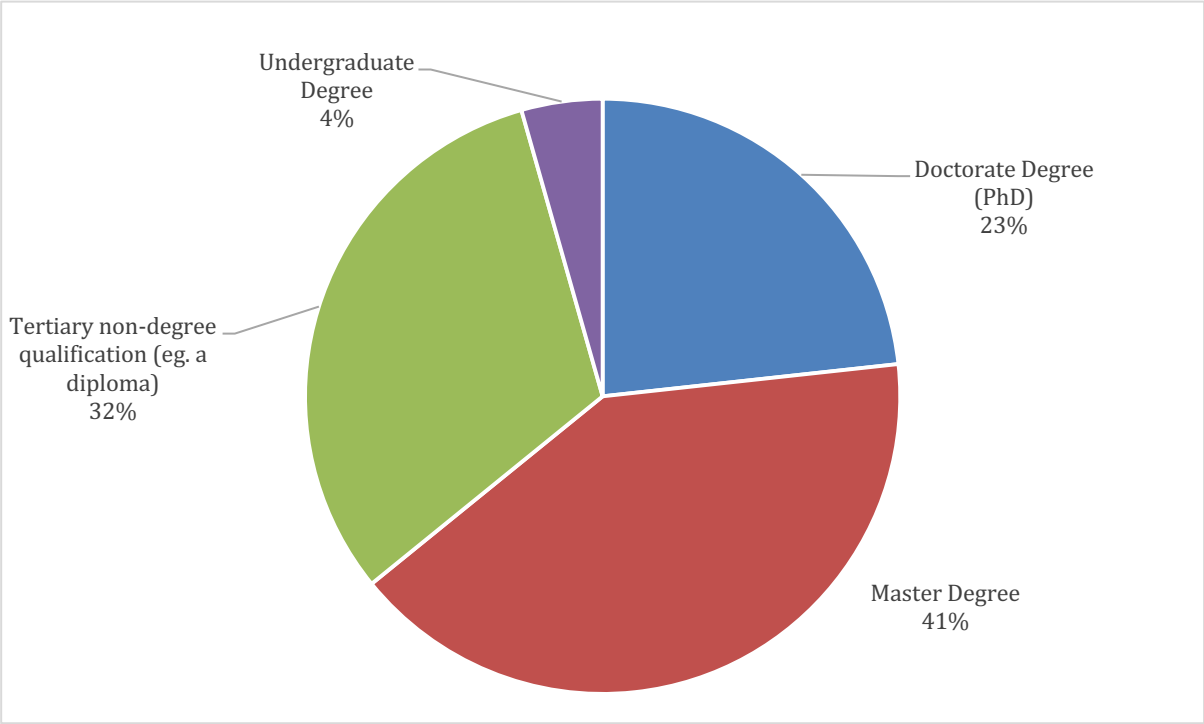

Fig. 10 56% (n=186) respondents said they would or may be interested in studying archaeology within the next two years (2019-2020). The breakdown of desired qualification indicates a demand for Master degree and certificate courses. Source: SEAMEO SPAFA

It is important to note that there are not many certificate or postgraduate diploma courses offered in archaeology in Southeast Asia - this nascent demand may represent a gap in the current education system that education institutions may be interested in filling.

Employment in Archaeology and Cultural Heritage

78 respondents reported being employed in an archaeology related field in 2018, and a further 42 indicated they were working in a cultural-heritage related field that was not related to archaeology. Together, these respondents represent 36% of the total surveyed.

Employed in archaeology-related field (n=78)

The ratio of Southeast Asian nationals to non-Southeast Asians who were employed in an archaeology-related job is 3:1 (Figure 11). All but three respondents who were employed in an archaeology-related field in 2018 reported working in Southeast Asia,

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with the exceptions working in China, Japan and the UK. Therefore, we can consider this batch of respondents to be highly representative of the current archaeology industry in Southeast Asia. Most (75%) of these respondents were in possession of an archaeology degree, with the remaining split between those who are current students and people who do not have a formal archaeology education (Figure 12). The high proportion of archaeologists who possess a relevant degree suggests a high level of professionalization in the field.

In terms of length of time employed, the workforce is skewed towards the younger end, with the largest group of respondents (n=18) being employed for less than two years. Overall, close to 62% have been employed for less than 10 years. Only five people reported being employed for between 20-30 years, but the number surges to 11 after 30 years (Figure 13). Universities and Government (including local governments and museums) are the two largest sectors that employ archaeologists in the region, accounting for 80% of jobs (Figure 14).

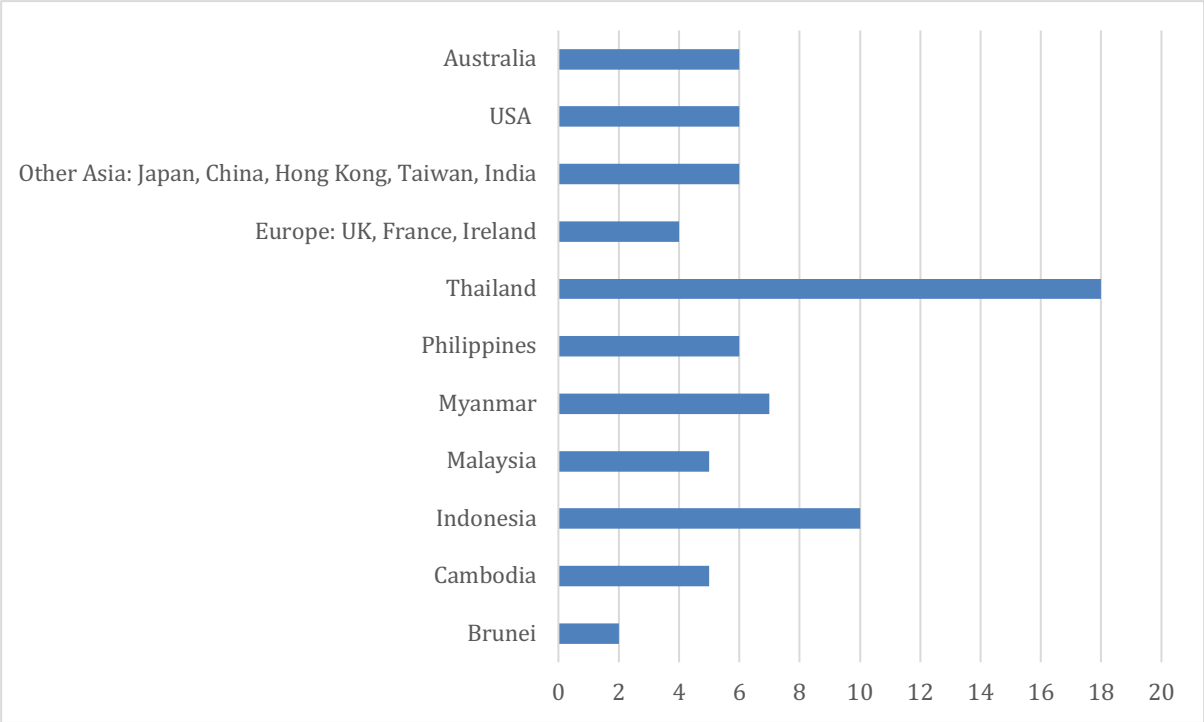

Fig. 11 Breakdown of respondent nationality (n=78) who reported being employed in an archaeology-related field in 2018. All but three also reported working primarily in Southeast Asia. Source: SEAMEO SPAFA

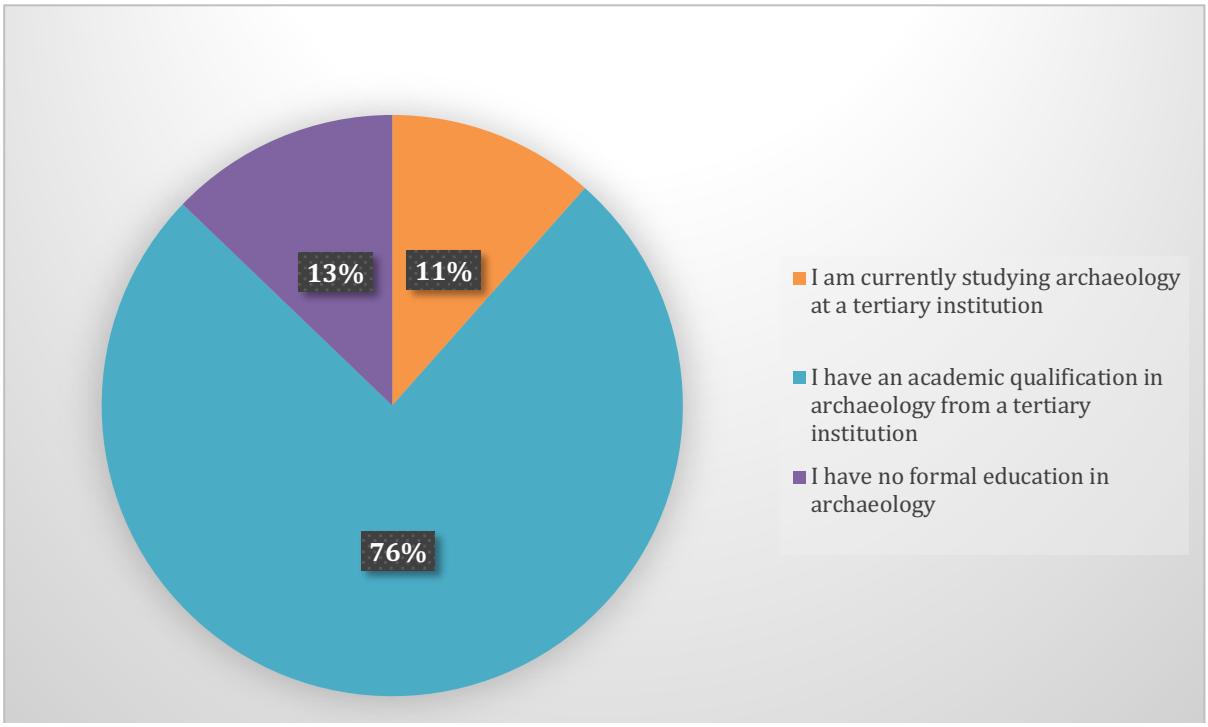

Fig. 12 Education profile of respondents working in an archaeology-related field in 2018. Source: SEAMEO SPAFA

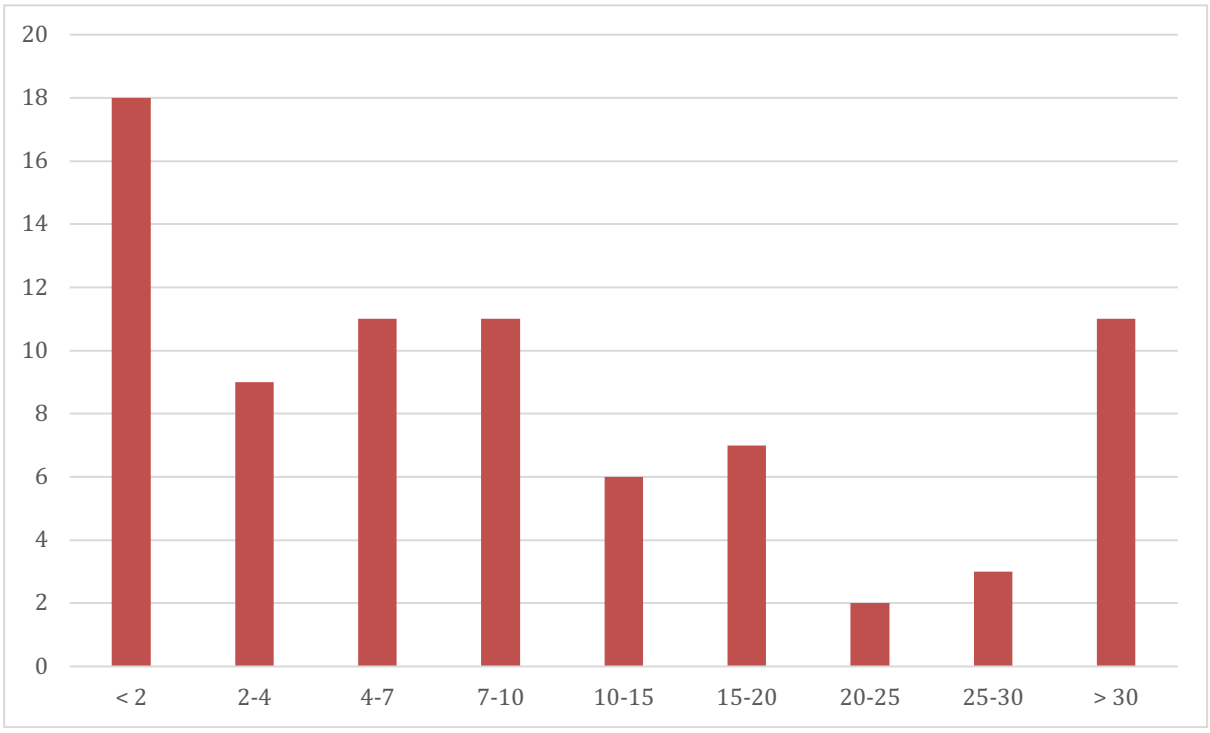

Fig. 13 Distribution of respondents working in an archaeology-related field in 2018, according to the numbers of years worked. Source: SEAMEO SPAFA

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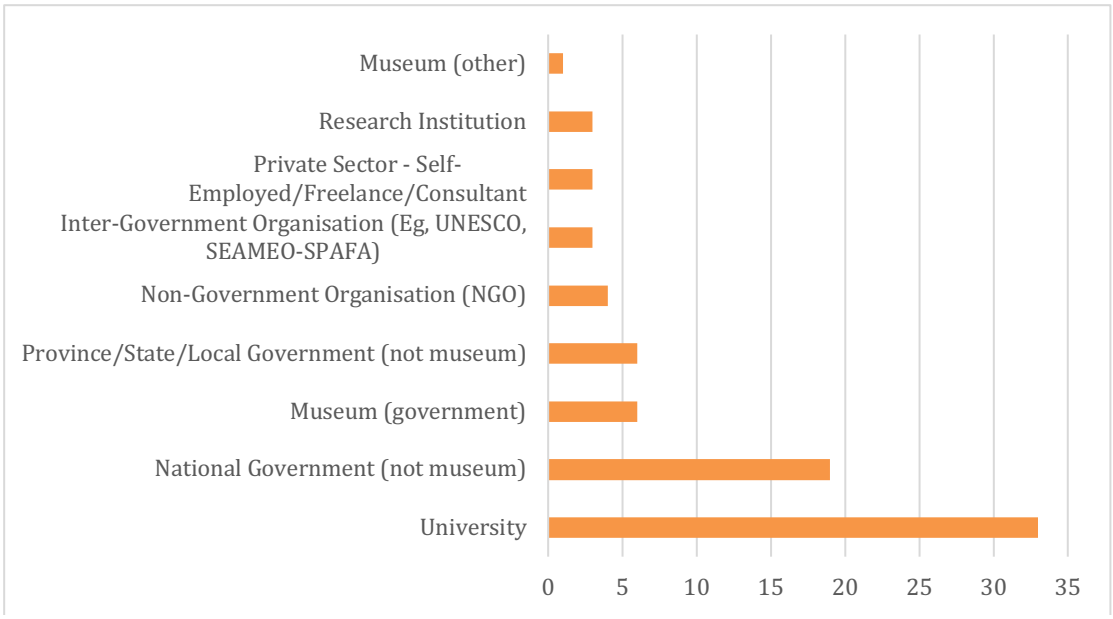

Fig. 14 Distribution of employer according to respondents working in an archaeology-related field in 2018. Source: SEAMEO SPAFA

There are slight differences in employment for male and female respondents (Figure 15). Males and females are employed in similar proportions in freelance and in full-time ongoing positions. However, males are twice more likely to be employed in full-time contract positions than females (37.1% vs 16.7%), and females are seven times more likely to be employed in part-time positions (21.4% vs 2.9%). Overall, men are employed in full-time positions 85.7% of the time, compared to women at 69.1%.

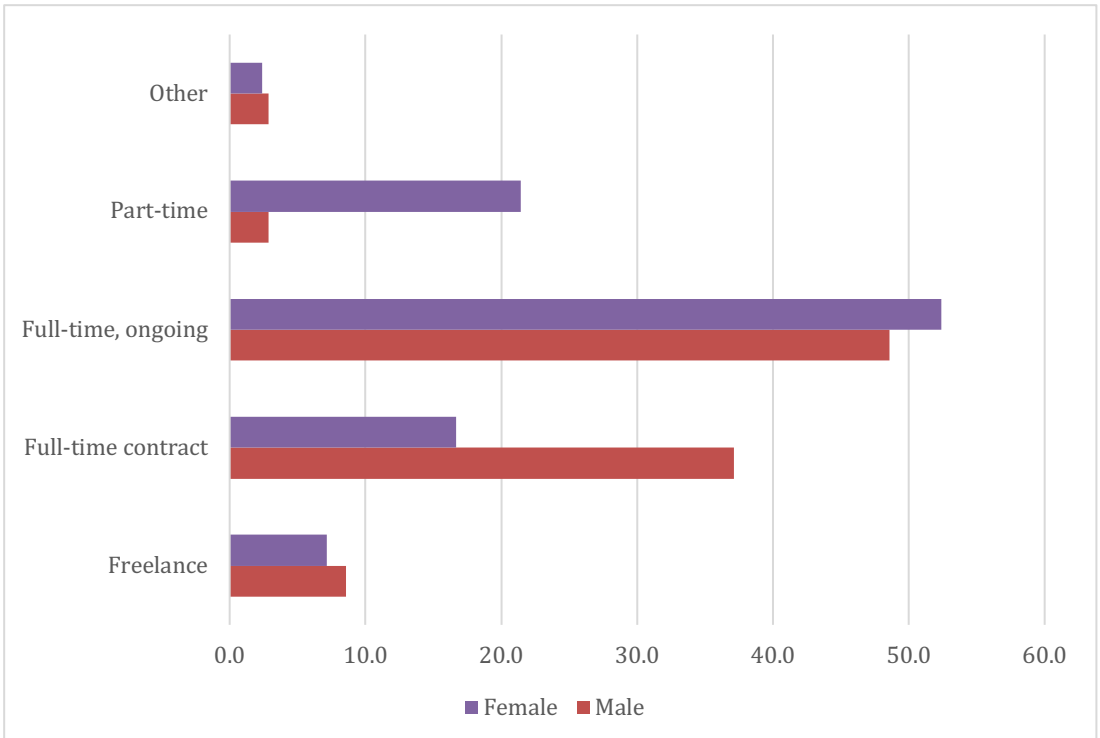

Fig. 15 Nature of employment for those employed in an archaeology-related field (n=78), divided by gender. Source: SEAMEO SPAFA

Employed in cultural heritage field that is not archaeology (n=42)

The survey also distinguished between employment in a cultural heritage field that was not archaeology, with the underlying assumption that cultural heritage is inherently interdisciplinary, and this study would provide an opportunity to see how this quality would affect the industry. Unfortunately, this group of individuals may not be representative of the region. 69% of this group (n=29) are made up of Southeast Asian nationals, but Singapore (9) and Thailand (10) comprise the bulk of these individuals. It is interesting to note that 16 of these individuals (38%) report having an archaeology degree. The people in this group also reported working for government, university, in museums (of different kinds) and in the private sector, at roughly the same proportion as Figure 14. Most of these people reported working in the Southeast Asian region.

It should be underscored that this subset of respondents is too small and contains several distortive points of data to provide any generalizing observations about the employment in the cultural heritage industry at large. It can be suggested that the significant (38%) numbers of people employed in the cultural heritage who possess an archaeology degree may indicate another area of employment that is not adequately captured by this survey.

Identification of Skills Competency Training Needs

Respondents across the survey were asked to rate and identify their competency in specific skills and need for future training. In section we focus only on the responses by people who have a qualification in or are currently studying archaeology (n=136) and people who are currently employed in an archaeology-related field (n=78) - a total of 171 people (52% of the respondent pool). Respondents were asked to rate their competency and/or to identify their importance on a scale, in the following skills:

- 3D modelling
- Ceramics analysis
- Conservation of artefacts
- Dating techniques
- English Language
- Excavation
- Ethnographic recording
- Faunal analysis
- Field survey
- First Aid
- Fundraising
- Heritage Impact Assessment
- Human skeletal analysis
- GIS
- Legislation and Policy
- Library/archive research
- Local Language (language used in your fieldwork area)
- Mapping
- Photography

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- Project Management
- Public / Community Engagement
- Public Speaking
- Remote sensing
- Report writing
- Rock art recording
- Statistical Analysis
- Stone tool analysis
- Teaching
- Tourism-related
- Underwater survey and excavation
- UAV (unmanned aerial vehicles / drones)
- UUV (unmanned underwater vehicles / drones)

Competency

Respondents who indicated that they are working in an archaeology-related field were asked to rank their competency in the skills listed above on a scale of 0-4 (0 being 'no experience' while 4 being 'very competent'). The aggregate scores are presented as a percentage in Figure 16, based on the maximum achievable score. From the responses, we can identify that the skills most archaeologists express competence in (70% and higher) are also the most general: Report writing, English language and Library research. In fact, only two technical skills specific to archaeology, Excavation and Field Surveys, appeared in this band.

A larger proportion of technical skills appear in the 50-70% range, including ceramics analysis, heritage impact assessments, mapping, photography although these are mixed with a smaller proportion of general skills such as local language ability, teaching and public engagement. Unsurprisingly, the most specialised skills such as underwater archaeology and the use of drones received the lowest competency scores.

As a starting point, we may consider that skills that garner a score of higher than 50% (more than moderate competency) as part of the average package of skills that archaeologists in employment have as a part of their profession. Additionally, it would be necessary to see if education institutions are able to meet training needs in these skill areas. In the next section, we consider what skills the profession identified as needing more training opportunities.

Skill	No experience	Limited competency	Moderate competency	Very competent	Score
3D modelling	47	10	15	6	24.8
Ceramics analysis	10	24	31	13	53.4
Conservation of artefacts	16	31	27	4	41.5
Dating techniques	26	27	21	4	34.6
English Language	1	11	29	37	76.9
Excavation	8	7	30	33	70.9
Ethnographic recording	15	25	27	11	47.9

Faunal analysis	32	30	12	4	28.2
Field survey	2	14	27	35	73.9
First Aid	16	26	26	10	46.2
Fundraising	20	24	28	6	41.9
Heritage Impact Assessment	10	24	30	14	53.8
Human skeletal analysis	36	23	15	4	27.8
GIS	28	27	18	5	33.3
Legislation and Policy	16	29	28	5	42.7
Library/archive research	4	11	25	38	74.8
Local Language	9	18	26	25	62.0
Mapping	10	23	31	14	54.3
Photography	1	13	42	22	69.7
Project Management	8	12	30	28	66.7
Public / Community Engagement	2	14	36	26	70.1
Public Speaking	2	13	35	28	71.4
Remote sensing	28	22	20	8	36.8
Report writing	1	10	25	42	79.5
Rock art recording	30	21	21	6	34.6
Statistical Analysis	18	27	28	5	41.9
Stone tool analysis	24	36	10	8	34.2
Teaching	8	13	25	32	67.9
Tourism-related	14	17	33	14	53.4
Underwater survey and excavation	58	11	4	5	14.5
UAV	53	17	6	2	15.0
UUV	70	6	2	0	4.3

Fig. 16 Self-reported competency skills by respondents who were working in an archaeology-related field (n=78). The final score on the last column is a percentage derived from the maximum achievable score. Source: SEAMEO SPAFA

Training Needs

Respondents to the survey were also asked to rank the skills that archaeologists along a four-point scale ranging from Not Important to Essential. For this question we only considered the responses by people from the 171 people respondents who have an association with archaeology (Figure 17). The scoring utilised a similar methodology as the competency calculation, except that responses of "No Idea" were not factored into the final percentage. The results skewed more to the right, with the lowest score coming at 45.6% and 49.1% for the use of drones. This may indicate that archaeological professionals consider all these skills to be somewhat important, even though they may not necessarily be competent in all of them.

Skill	No idea	Not Important	Good to have	Very Important	Essential	Score
3D modelling	10	7	68	66	20	53.8

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Ceramics analysis	6	2	37	74	52	68.9
Conservation of artefacts	7	3	26	52	83	77.0
Dating techniques	6	4	26	63	72	74.3
English Language	2	1	34	59	75	74.4
Excavation	6	1	12	43	109	85.9
Ethnographic recording	7	5	36	69	54	68.3
Faunal analysis	15	6	57	60	33	59.0
Field survey	5	1	11	52	102	84.5
First Aid	6	7	43	66	49	65.1
Fundraising	6	11	43	69	42	62.0
Heritage Impact Assessment	5	2	23	75	66	74.5
Human skeletal analysis	7	9	46	69	40	61.8
GIS	10	4	36	70	51	68.1
Legislation and Policy	5	9	39	65	53	65.9
Library/archive research	4	3	19	58	87	79.0
Local Language	4	3	42	62	60	69.1
Mapping	4	1	20	78	68	75.8
Photography	1	4	25	80	62	72.7
Project Management	5	4	26	72	64	72.7
Public / Community Engagement	3	4	17	72	75	76.6
Public Speaking	2	6	28	87	48	68.2
Remote sensing	17	4	48	67	35	62.1
Report writing	3	1	12	46	109	85.5
Rock art recording	9	14	54	55	39	57.8
Statistical Analysis	6	7	40	70	48	65.5
Stone tool analysis	6	17	46	66	42	61.4
Teaching	7	3	46	64	51	66.5
Tourism-related	9	15	63	54	30	53.7
Underwater survey and excavation	11	19	60	52	29	52.3
UAV	12	19	66	54	20	49.1
UUV	13	22	72	48	16	45.6

Fig. 17 The importance of archaeological skills rated by respondents who have studied, are studying, or working in archaeology (n=171). Responses of 'No Idea' were not factored into the calculation of the final percentage score. The top five scores are marked in yellow; the next band 7-12 are green. These twelve skills have a score of more than 70%. Source: SEAMEO SPAFA

Using the 70% mark as a threshold between the most important skills archaeologists believe they need and the skills they actually have, would indicate a skills deficit in several areas (Figure 18). It may also be worth considering the next band of skills identified in the 60-70% range as potential areas for training, given that many

archaeological skills are necessarily specialised, and this scoring system gives an indication of where training can be prioritised (Figure 19).

Main Competencies	Identified Needs
• Report writing (79.5%) • English Language (76.9) • Library/archive research (74.8%) • Field Survey (73.9%) • Public Speaking (71.4%) • Excavation (70.9%) • Public / Community Engagement (70.1%)	• Excavation (85.9%) • Report Writing (85.5%) • Field Survey (84.5%) • Library/archive research (79%) • Conservation of artefacts (77%) • Public / Community Engagement (76.6%) • Mapping (75.8%) • Heritage Impact Assessment (74.5%) • English Language (74.4%) • Dating techniques (74.3%) • Photography (72.7%) • Project Management (72.7%)

Fig. 18 Top skills from identified Competencies (Table 15) and Needs (Table 16) with a threshold score of 70% or higher. Highlighted skills suggest areas where training efforts can be prioritised. Source: SEAMEO SPAFA

Skill	Score (Ranking)
Conservation of artefacts	77.0
Heritage Impact Assessment	74.5
English Language	74.4
Dating techniques	74.3
Photography	72.7
Project Management	72.7
Local Language	69.1
Ceramics analysis	68.9
Ethnographic recording	68.3
Public Speaking	68.2
GIS	68.1
Teaching	66.5
Legislation and Policy	65.9
Statistical Analysis	65.5
First Aid	65.1
Remote sensing	62.1
Fundraising	62.0
Human skeletal analysis	61.8
Stone tool analysis	61.4

Fig. 19 Top skills identified by archaeological professionals and as the most essential or most important, which suggest priorities for the current training needs. Source: SEAMEO SPAFA

It should be noted that several training programmes organised by institutions within the region have attempted to meet some of these training needs, such as GIS training organised by UNESCO Bangkok and the Underwater Archaeology Division of the Fine Arts Department, Thailand in 2014 and 2018 respectively, and the ceramics identification course organised by the Siam Society in 2019.

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Other Skills Identified

Respondents were also given space to suggest other areas of training that were not in the original list of skills. We considered the opinions of the same pool of 171 people who are related to the archaeological profession. The suggested skills were grouped into five themes: Archaeological skills, General (inter-disciplinary) Knowledge, Communication Skills, Specialised Knowledge and Technical Skills (Figure 20).

Archaeological Skills	**General Knowledge**
• *Artefact/Site conservation • *Archaeological theory and analysis • *Ethics • *Project management: field logistics • Excavation • Field training • Archaeological interpretation • Research design • Statistical analysis	• *History • *World archaeology • Geology and Geophysics • Writing and Publishing • Art history • Area Studies • Interdisciplinary integration • Religious studies
Communication Skills	**Specialised Knowledge**
• *Public Communication • *English Language: including western accents • *Communication skills: Diplomacy, public speaking • *Community Archaeology and Community engagement • Interpersonal skills • Local languages	• *Ethnoarchaeology and Ethnography recording • Cultural Resource Management • Genetics • Ancient languages • Archaeobotany • Environmental archaeology • Heritage Impact Assessment • Paleolithic Archaeology • Anatomy • Astronomy • Cultural Heritage Studies • Disaster risk management • Ecology • Epigraphy • Exhibition curating • Experimental archaeology • Geoarchaeology • Museum Studies • Palynology • Zooarchaeology
Technical Skills	
• Adobe Photoshop • 3D modelling • Cave Archaeology • Database Development • Diving for maritime archaeology • Flotation training • Geophysical ultrasound • Information technology • Laboratory work • Lidar • Maritime Archaeology • Photography	

Fig. 20 Training needs in other skills related to archaeology identified by archaeological professionals that were not in the initial list. Skills marked with an asterisk were identified more than five times by respondents and may suggest a nascent demand for training in these areas. Source: SEAMEO SPAFA

As an open-ended question, the responses were more candid, sometimes repeating skills that were mentioned in the previous questions. Several skills and competencies that were not featured in the ranking list were also highlighted. These should be integrated into future versions of the study.

The skills most identified as requiring training are in general archaeological skills and communication skills. In the first group, the need for training in artefact and site conservation, especially in post-excavation and in-situ contexts ranked first and the demand for this skill mirrors the identified need for training in artefact conservation in Table 19. Two other needs were identified for training in archaeological skills: ethics and archaeological theory.

In the suite of communication skills, several interrelated needs were identified. Respondents identified the need for training in public communication, community engagement and community archaeology and the ability to share findings to the general public as well as build collaborations with local communities. Another aspect of communication skill identified was in English language skills in general, public speaking and diplomacy, which may be extended to conflict resolution, inter-cultural communication and etiquette.

Numerous technical skills and specialised fields of knowledge were identified by respondents, but no one topic garnered a significant amount of attention except for ethnographic recording and ethnoarchaeology, and to a lesser extent, cultural resource management. Ethnographic recording was also identified as an in-demand skill by archaeological professionals in Figure 19.

The identification of other skill training needs in an open-ended question provided a means to identify other skills and competencies that were not included in the initial list and can be integrated into future iterations of this survey. Additionally, there is some confirmatory support that the skills identified in Table 19, particularly in the conservation of sites and artefacts and ethnographic recording actually in demand, since they are also mentioned in the question summarised in Figure 20.

Conclusion

The SEAMEO SPAFA Survey on Archaeology Education in Southeast Asia is the first study of its kind in Southeast Asia, and designed as a way to identify the major education institutions related to the field both inside and outside of the region, and identify the training needs for regional archaeologists in the mid-to-long term. The respondents appear to be generally representative, as most are either Southeast Asian nationals or live in Southeast Asia. About half of the pool (171 individuals) have received formal education in archaeology and/or are working in the archaeological profession. It is unclear how representative this group is other wider archaeological community in Southeast Asia, since there are few professional organizations in the region that keep track of member numbers. A good proxy for population estimation would be conference numbers: the SEAMEO SPAFA International Conference on Southeast Asian Archaeology in 2016 and 2019 attracted 220 and over 330 participants respectively. The respondent pool represents 50-70% of this population

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and it is possible that the survey is a good representation of the archaeology community in Southeast Asia. It is hoped that future iterations of the survey will receive more responses in order to improve our understanding of the data.

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Supplementary Material

- Survey instrument with translated text