

GRAND CHALLENGE No. 4: CURRICULUM DESIGN

Curriculum Matters: Case Studies from Canada and the UK

Introduction

Archaeology in the 21st century increasingly faces outward, with many archaeologists working on projects that actively involve the public, young people, and representatives of industries, governments, and local communities. The history of learning about the past, in primary/secondary schools and universities, always reflects the prevalent pedagogies of the age. Our article, therefore, addresses two different ways of learning about archaeology. First, it presents an online university graduate program in Canada for Bachelor's-level Cultural Resource Management (CRM) practitioners, and a module on archaeology and education which may form part of a variety of Master's degrees in the UK. Second, it examines the ways in which archaeology has been introduced into a range of subjects in the National Curricula of the UK.

Case Study 1:

A Master's Program in HRM for Working Professionals at Simon Fraser University

Our first case study reviews university-level training for professional archaeologists who find themselves willing to make a career commitment to the field but unable to take sufficient time away from family and professional obligations to attend a traditional graduate program. These busy working professionals accepted invitations received as Bachelor's candidates to become involved in archaeology. They have been successful as CRM field technicians and laboratory analysts, and as museum and government staffers; however, to eliminate obstacles to upward, and in some cases lateral, mobility they require graduate degrees. Because they know *how* to do archaeology, the central educational challenges involve teaching them *why* they do archaeology the way they do it and how they can do it with expanding benefits and few or no added costs.

More than just an academic fad, recent expansions in the broad field of heritage studies are responses to significant political, practical, and institutional dynamics. Global-scale surges in population, resource extraction, and climate change are

prompting new types and levels of work to protect and carry forward the most useful and meaningful aspects of biophysical and cultural heritage. National, regional, and local laws in most parts of the world now require systematic investigations to discover and evaluate the significance of cultural heritage sites and objects, then to conserve heritage values threatened by land alteration and community development projects (Cleere 1989; Messenger and Smith 2010). CRM, Heritage Resource Management (HRM), Cultural Heritage Management, and Archaeological Resource Management all refer to work done to assure project compliance with cultural and environmental protection laws (McManamon 2018). Growth and diversification in these cognate fields—referred to here as HRM to embrace inclusivity and respect for descendant communities whose heritage is often disproportionately affected (see Supernant, this issue)—has created new challenges for anthropology and archaeology, which are the academic launch pads for the great majority of professional HRM practitioners.

Traditional disciplinary programs at public universities have been under pressure for decades from HRM industry leaders and government regulators to produce personnel ready to (1) identify heritage imperiled by project plans, (2) assess heritage significance, and (3) avoid or reduce project impacts on significant heritage (Welch et al. 2018). Each of these three common phases in the HRM process must be tailored to distinctive aspects of local geographical and cultural histories. The highly contingent, context-specific nature of HRM makes skills generally acquired on-the-job equally if not more important than classroom learning. This is the principal reason why several generations of university curricular experiments have failed to find real balance between efficiency (as defined by the emerging global standard of a two-year Master's degree) and effectiveness in creating pathways for students to earn the post-Baccalaureate research credential (that is, a Master's or Doctorate degree) required for full HRM career potential. What follows is the story of how one university has crafted a curriculum to address these challenges and to meet HRM practitioners' demands for "global learning" that allows them to maintain their jobs and lifestyles while attending graduate school.

Curriculum drivers

The foregoing provides the point of departure for grasping the implications of several issues that are the impetus for change in higher education for archaeologists. First, and perhaps foremost, is the divide, apparently growing, between research- and compliance-focused archaeologies. The original rationale for archaeology's seminal and persistent role in compliance-focused HRM is the creation of knowledge and perspective from heritage sites and landscapes undergoing industrial and demographic transition. The policy principle for this rationale is that the public deserves something in return for the loss of communal lands and resources transformed by cities and

subdivisions, infrastructure, and resource extraction. That something is usually knowledge about the past grounded in material evidence gathered from lands slated for alteration.

The entry of archaeologists and other knowledge-driven HRM practitioners into the market- and government policy-driven milieu of resource extraction and community development, coupled with downward trends in government oversight and public trusteeship, has entailed demands for efficiencies in the cost of HRM services. Miners, land developers, construction companies, and their political allies almost invariably prioritize the compliance required for their current projects over the research necessary to advance the long-range interests of local communities, of HRM practice, or of academe. This challenge is particularly poignant in British Columbia, Canada, and other jurisdictions that do not require excavation permittees to hold research credentials. HRM practitioners who have not availed themselves of intensive research training through participation in graduate programs with a thesis or major project requirement are generally less prepared to 'see' and advocate for the research processes and products at the original heart of HRM. The lamentable and increasingly frequent result is 'checklist' or 'cookie cutter' HRM, an approach largely divorced from the local-contextual details that make classroom-only training impractical without field-based complements (Ferris and Welch 2014; Welch and Ferris 2014).

The second driver for change is mentioned above: HRM company owners and government regulators have long advocated for Master's programs to feature substantial practical training in HRM job skills. A Society for American Archaeology task force dedicated to the creation of curricular recommendations noted the growing diversity and specialization of professional practice in HRM and concluded by urging

all graduate programs in archaeology to include training in the following areas:

- Communication skills, both verbal and writing.
- Historic preservation law and regulation and applicable environmental laws.
- Proposal preparation, including research design, time estimates, and budget.
- Basic methods and techniques for survey, mapping, sampling, testing, and excavation.
- Basic methods and techniques for processing, cataloging, and recordkeeping.
- Quantitative methods and analysis.
- Basic computer techniques in word processing, spreadsheets, and database management.

- Basic methods in photography, drafting, and graphics.
- Report preparation, editing, and production.
- Archival research (federal agency and state site files and county offices).
- Use of source materials such as land survey maps and soil surveys (Elston 1997:n.p.).

Against the backdrop of this daunting and, by some measures, incomplete list, it bears mention in the early 2020s that employers and bureaucrats are not the only advocates for graduate training that augments practical skillsets and professional capacities. Many students report greater interest in gaining employability than in accumulating knowledge and perspective. It is almost too obvious to point out that this is especially true for learners committed to careers as HRM practitioners. These students often prioritize increased earning potential as a principal rationale for graduate studies.

The third driver for change in HRM graduate training derives from a combination of customary career pathways and employment markets for HRM practitioners. Most HRM personnel start their careers as field technicians working for companies that specialize in finding, documenting, and assessing and reducing the effects of land-alteration projects on cultural heritage sites. Equipped with Bachelor's degrees in anthropology and archaeology, they venture bravely into HRM realms of field walking, shovel testing, safety training, truck packing, and form filling (Webster 2014). Opportunities for advancement to crew chief and various specialized jobs await those with interests, diligence, and basic training or aptitude in management, mapping technologies, or the classification of plant, animal, or artifactual remnants. The actual work—especially for those who enjoy frequent travel, outdoor adventure, physical exertion, and greasy spoon dining (that is, especially, folks in their twenties and thirties)—can be rewarding, experientially if not always financially.

It can also be a trap, a career cul-de-sac. Once embedded in the HRM world, and especially as a core staffer at one of the hundreds of firms that dot the landscapes of rural US and Canada, cobbling together the personal and financial support required to return to graduate school can be a major undertaking. Obstacles in the path of returning to school seldom decline. Graduate school costs for HRM practitioners increase with time in the career, with distance to universities that offer applicable programs, and with the depth and breadth of familial and financial responsibilities (that is, with the blessings of domestic partners, children, and mortgages). Archaeology faculty at British Columbia's Simon Fraser University (SFU), have seen hundreds of promising baccalaureates march into HRM; only a few dozen have returned for graduate degrees at SFU or other universities. Archaeologists at SFU and in other academic and HRM settings have been vigorous in demonstrating the integral importance of research in

HRM practice and in advocating for policy changes to encourage HRM permittees to hold research credentials. Despite good faith efforts to push all HRM toward greater emphasis on the creation and mobilization of the knowledge embedded in the places, objects, and traditions of lands and landscapes slated for alteration, progress has been uneven. And so, circa 2014, came the time for SFU faculty to act more decisively on our policy and practice convictions by using the three drivers summarized above as guides for designing a purpose-built graduate program to serve professional archaeologists.

The SFU Archaeology HRM Program

Founded in 1965, SFU is defined by a dynamic integration of innovative education, cutting-edge research, and diverse forms of community engagement. SFU is consistently ranked amongst Canada's top comprehensive universities and is one of only a few Canadian universities accredited in the United States. SFU's Department of Archaeology is research focused, as recognized in the QS International Rankings for archaeology, where in 2020 it rated 26th globally and 8th on a global scale for research impacts (QS University Rankings 2020). Since it started granting degrees in 1971, SFU Archaeology has been a successful locus for BA and MA training for archaeologists in Western Canada, with a total of over 1,000 BAs, 220 MAs, and 75 PhDs completed. Of those SFU alumni actively employed in archaeology, at least 90% work as HRM crew members, project managers, company owners, governmental officials, and museum professionals. The SFU (2019) welcome page of the Department of Archaeology website identifies "First Nations Heritage and Resource Management" as one of three areas of "concentrated expertise." SFU Archaeology faculty, staff, and students have spent the past two decades building partnerships, training students, and customizing research to engage with the communities whose ancestors most archaeologists study (Nicholas and Markey 2003).

The SFU Professional Graduate Program in HRM takes a global perspective on emphatically local and frequently consequential questions concerning what material heritage is to be preserved, and what forsaken, in the course of community and economic development. Such questions constitute the distinctive nexus of public policy, business, research, and professional practice referred to as HRM. SFU's HRM Program objective is to provide practice-proven, Bachelor's-level HRM practitioners with opportunities to obtain the knowledge, skills, perspectives, and research-focused graduate degrees they need to advance their individual careers and HRM policies, practices, and enterprises. In particular, the HRM Program exists to:

- Enhance collaborative, ethical, successful, impactful HRM practice.
- Harmonize descendant, steward, governance, business, and intellectual community interests in HRM.

- Expand recognition of HRM as a dynamic field that integrates research, public policy, and community objectives.
- Consolidate SFU as a global center for innovative learning-teaching-research-outreach discourse in archaeology and HRM.
- Maintain and revitalize archaeology's roles in HRM leadership.

This suite of goals and purposes is pursued through six specific educational outcomes, the measures of successful completion of the HRM Program. HRM Program graduates are expected to be able to do all six of the following:

1. *Identify and analyze* how personal, collective, governmental, and institutional values and interests are linked to heritage and how these values and interests influence management processes and outcomes.
2. *Recognize, describe, and practice heritage resource management* as an international, interdisciplinary profession that draws strengths and creates synergies from the integrated application of biophysical science, social science, and humanities to heritage and heritage management.
3. *Compare and apply* international, Canadian, and US systems for heritage regulation, identification, categorization, evaluation, and treatment.
4. *Identify and engage* individuals and groups with interests tied to particular heritage in discussions regarding the values, threats, management priorities, and investigative and interpretive opportunities presented by that heritage and its status.
5. *Plan, prepare, and deliver* the results of HRM research.
6. *Identify and put to work* reliable knowledge, skills, and expertise relating to heritage resource management law and policy, ethics and practice, business and management, and research planning and methods.

The HRM Program is purpose-built for busy, working HRM professionals with Bachelor's degrees and interests in a thesis-focused Master's program to unleash their full career potential. The HRM Program admissions requirements are straightforward: a minimum of one year of professional employment in HRM, preferably with duties that include report writing responsibilities and client contacts. The Program faculty is made up of HRM practitioners more interested in attracting students with HRM experience than in exceptional undergraduate GPAs. The HRM Program process is similarly concise: a three-day on-campus orientation, four required courses—each focused on one of the four essential dimensions of the HRM field—and a traditional Master's thesis involving a substantive, data-driven analysis of a worthy HRM problem.

Students with family and professional obligations who may not be able to relocate for their studies are explicitly welcomed and accommodated. With three

exceptions—the on-campus orientation, the ‘virtual meetings’ held each week during the teaching terms, and the juried thesis defenses—the HRM Program is delivered asynchronously online (see Peuramaki-Brown et al., this issue). The three-day on-campus orientation during the first week of fall term sets the tone and pace for high-quality, collegial communications within the cohort and among faculty, candidates, industry, community, and government partners. Each of the four required courses has been designed and delivered using the Canvas™ learning management system and in close collaboration with the director and staff of the SFU Centre for Online and Distance Education. The Program’s online learning environments are further supported by customized learning tools, including an automated, program-specific glossary and the use of Blackboard Collaborate™ to engage all Program participants and industry specialists in coursework and thesis research. There are no coursework options; all students sequentially complete the four required courses, each five credit hours, available exclusively to Program students (Table 1).

Student engagement following the Program orientation is maintained using the digital tools and didactic strategies detailed above. The coursework focus on United States and Canada facilitates cross-border comparisons, professional integration, and opportunities for international practice.

Following coursework completion, students advance to full candidacy and must complete a written thesis followed by a formal public defense adhering to standard SFU policies and procedures. The thesis requirement is explicitly framed as an opportunity for students to parlay prior experience, professional contacts, and distinctive access to data into a career-defining and -enhancing project. Candidates are encouraged to choose a thesis topic that is of particular interest to them or that relates to their current or desired professional practice. They are further encouraged to draw a second (or third) thesis supervisor from their existing or envisioned professional network.

Table 1: The SFU HRM Program course descriptions and key design elements

Designation & Title	Description	Pedagogy, etc.
ARCH 531: HRM Law and Policy	Provides a broad survey of international heritage authorities and rules with an emphasis on HRM policy in Canada and the United States. Particular attention is given to how the development of rules and organizations affect archaeological practice.	This course features weekly online content, weekly readings, and three instructor-evaluated weekly assignments—a reading comprehension quiz, a peer discussion, and a writing exercise.
ARCH 541: HRM Professional Practice and Ethics	Focuses upon the complexity of operating within an HRM field characterized by overlapping, and at times contradictory, professional standards and ethics. The emphasis is on opportunities to add value to knowledge creation and mobilization through creative engagements with clients, Indigenous and local communities, governments, partners, and publics.	This course features weekly readings, occasional blogging assignments, and instructor-evaluated weekly written commentaries, as well as a written response to a 'grand challenge' in the field of HRM.
ARCH 551: HRM Business Management	Contextualizes the business of HRM by targeting five clusters of essential concepts and tools in business management—accounting and finance; marketing, sales, and contracting; human resources, labor, economics, corporate governance, and risk management; business operations and project management; and business models, innovation, and globalization	This course requires students to understand and solve weekly problem sets in business management grounded in HRM case studies. The final assignment requires students to gather and analyze data as the basis for a formal proposal for an innovation in an operating HRM company
ARCH 561: HRM Archaeological Research Design and Methods	Examines the hallmarks of excellent research in HRM archaeology through studies of successful and less successful research designs and methods. The course provides essential guidance for student thesis preparation	Online lectures built around the challenges and opportunities presented by field research and laboratory and data analyses inspire students to examine and refine their full thesis proposals for presentation to supervisors

HRM Program impact and assessment

SFU Archaeology's HRM Program is addressing strategic needs at societal, institutional, departmental, and disciplinary scales. On societal levels—in Canada and around the world—HRM leaders trained to work at the interface of government, industry, community, and research are needed to support good decisions regarding the disposition of cultural heritage imperiled by land alteration, resource extraction, and climate change. As Canada's engaged university, and as the host for the country's largest and best equipped department of archaeology, SFU is mobilizing existing faculty and organizational assets to meet demands for highly qualified personnel from the HRM industry and mandates for better and more broadly informed cultural heritage research and conservation.

The HRM program is unique in its presentation. All other comparable Master's programs either neglect the requirement for a written, juried thesis or include three or more terms of intensive coursework, guaranteeing completion times greater than two years. No other program has been designed and implemented to serve the needs of working HRM professionals willing and able to excel in online coursework and in the preparation of a Master's thesis on a problem in the broad field of HRM. The first suite of cohorts (26 students since 2016) have assisted and participated in the expansion of the program's community, industry, and government networks. In many ways they are primary creators of the rich and collegial learning environment. HRM Program candidates and graduates are expanding the geographical and managerial range of their employability in archaeology, environmental resource management, construction and compliance support services, museums, and government regulatory and planning offices at regional, provincial, and federal levels.

Cognizant of what Harrison (2017:2) references as a "skills gap" in higher education, SFU Archaeology's HRM Master's Program requires entrants to possess practitioner skill sets, then to build upon, integrate, and deploy their distinctive professional experience and related assets through Program coursework and thesis research. Because the Program strongly encourages students to engage HRM employers, Archaeology faculty, and current and desired colleagues, the Program also constitutes a test of the viability of this form of academic-industry partnership. Looking ahead, it is too early to judge the success of this experiment in enabling HRM archaeologists' access to online graduate coursework and research credentials. As of 2020, the Program has successfully completed collegial, university, and governmental reviews and is authorized as a continuing credential offering. The results of the "Full Program Proposal" review will soon inspire a new design cycle to further refine a Master's curriculum explicitly crafted to attract additional industry partners and keep pace with the dynamic and rapidly globalizing HRM field.

Case Study 2:

A Course for Master's Students in Archaeology and Education at the UCL Institute of Archaeology

University College London (UCL) was founded in 1826 and became part of the federal University of London. It was the first university in England to provide an education for a wider range of students than were normally admitted into universities in the early 19th century. From the beginning, students from outside London, from overseas, and of any race, class, or religion were welcomed. It was the first university (in 1878) to admit women on equal terms with men. As an undenominational institution it was supported by reformers and dissidents (Lawson and Silver 1973:257-258). Today, UCL has around 38,000 students from about 150 different countries.

The Institute of Archaeology (IoA) at UCL was created by the efforts of the archaeologists Mortimer and Tessa Wheeler and was formally opened in 1937 as a center for teaching and research in archaeology. Mortimer Wheeler (later Sir Mortimer) was the IoA's first Honorary Director from 1934 until 1944 (Hawkes 1982:122-143). Today, it is the largest university-based archaeological institution in Britain, with nearly 350 students in 2017/18 from 40 different countries (UCL 2018a). Degrees can be part time or full time and classes at the IoA include students who have just completed their first degree and mature students, along with those who have worked or are still working in heritage or museums.

A key to widening participation for higher education is through “partnership working.” Universities attempt to reach potential students through other institutions such as schools (Corbishley 2011:331-340), employers, parents, and groups within communities, and UCL has a Public Engagement Unit to share the work of the university as a whole with the wider community (UCL 2018b).

Archaeology and education at the UCL IoA

While the UCL IoA runs Master's degrees for a wide range of students from the UK and overseas—covering a range of cultural topics, such as Public Archaeology, Managing Archaeological Sites, and Museum Studies—in 2003 there were no courses that seriously included education. As a result, Mike Corbishley was invited to design and teach a graduate (post-Baccalaureate) course in *Archaeology and Education*, which continues running to this day. The course has no prerequisites for students and is taught over one term. The course consists of ten, two-hour sessions and students are expected to undertake around 70 hours of reading plus 60 hours preparing and producing the assessed work, which consists of a research essay of around 4,000 words. The total workload is some 150 hours.

The main aim of the course is to examine the ways in which archaeologists and educators may further an understanding and appreciation of archaeology in both formal and informal education, from pre-school to lifelong adult learners.ⁱ The course handbook outlines the content and its requirements in detail, with references to recommended reading works. The aims, learning objectives, and outcomes of the course are set out in Table 2.

The course examines a number of major elements (Table 3), such as the school curriculum and archaeology, interpreting sites for the general public (see Zutter and Grekul, this issue), the role of the media in promoting archaeology (see Kristensen et al., this issue), and ethics in archaeology. The course has practical elements that make it useful to those in CRM, museum education, or teaching in schools. In each session, there is a case study that exemplifies good practice from across the world. Students are encouraged to participate and sometimes to present topics from their own countries.

Each year, some former students from this course have gone on to become archaeological educators themselves in schools, museums, at historic sites, or in heritage organizations. A few have trained as teachers and have been able to use their understanding of combining archaeology with National Curriculum subjects, either in the classroom or with after-school or holiday activities in archaeology.

Table 2: Aims, objectives, and learning outcomes for the graduate course in Archaeology and Education.

Aims

The course aims to develop the student's knowledge and understanding of the history and development of education in archaeology, both in the formal curricula at all levels and in non-formal learning situations for adults and children at archaeological sites, monuments, and museums.

An important focus of this course will be the development of a student's ability to critically analyze current research and practice in resource provision and services for archaeology and education.

In addition, students will gain an appreciation of issues concerning the links between the formalized curricula and the historic environment. A variety of school subjects will be examined, including citizenship and the issues which surround it.

Objectives

On successful completion of this course a student should

- Recognize the nature of archaeology and education in the UK and in some other countries.
- Be familiar with the development of archaeology and education and of the methods used by archaeologists and heritage managers to inform and educate formal groups and the visiting public.
- Understand the key issues in providing and maintaining on-site and outreach programs for archaeological education.

Learning outcomes

A key outcome is to train students for independent research and careers in education services in the historic environment, in related professions, or in other professions, such as teaching, where such training will be useful. On successful completion of this course a student should have acquired skills in

- Critically examining and discussing resources and services provided for archaeological education.
- Applying learning and research to designing curriculum-based material for educational groups and information for general visitors to archaeological sites, monuments and museums.

Table 3. Syllabus for the graduate course in Archaeology and Education.

Syllabus

1. *Introduction to the course: Archaeologists as Educators*

Outlining the course and discussing its fieldwork and practical details; presenting the various ways in which archaeologists and heritage managers connect with the visiting public; discussing some of the issues that surround archaeology and education.

2. *Archaeology and school curricula: a world view*

Covering the main elements in curriculum policy, design, and implementation, in particular with regard to the place of archaeology in primary and secondary schools across the world.ⁱⁱ

3. *The use and misuse of textbooks*

Resources for teaching archaeology in schools, including website resources, will be examined and discussed. Includes a case study on the place, or lack of it, of prehistory in the curriculum.

4. *Archaeology across the curriculum*

Archaeology may be used in a variety of subjects other than history, from math to science, from expressive arts to geography. A number of successful cross-curricular projects from across the world will be examined.

5. *Visit to the Museum of London*

The aim of the visit is to examine the ways in which this modern museum explains the past to its visitors and makes its collections and information available to specialist groups, including school groups.

6. *Learning outdoors*

Archaeologists work like detectives uncovering clues to the past. This session looks at the ways in which the archaeological approach may be used to introduce children, students, and the public to learning about the past. Includes a case study of the education and outreach projects at Ancient Merv, Turkmenistan.

7. *Learning from objects*

This session looks again at detective approaches, in particular to observe and study objects to ask questions about the past. Part of the session will be devoted to examining a range of objects in the classroom.

8. *Education and outreach*

Archaeological outreach projects have become increasingly popular as a means of reaching different audiences. This session will examine different types of projects from around the world, including case studies from Monte Albán, Mexico and Lake Ledro, Italy.

9. *Archaeology and the media*

How archaeology is portrayed (and how archaeologists portray themselves) in the movies, on television, on radio, and in newspapers. Examples of television films will be shown in this session. Includes a case study of newspaper coverage for three archaeological projects.

10. *Archaeology and society*

This final session looks at, arguably, the most important part of archaeological education—citizenship and social studies. Through presentations and discussion, we will examine the ways in which the issue, as a concern for society as a whole and as a school subject, has been addressed. Case studies include ethical concerns, such as dark heritage, World Heritage Sites, and the re-use of historic buildings.

Case Study 3:

The Status of Archaeology in School Education in the UK

While it can be stated that teachers in UK schools in the late 19th and early 20th centuries were encouraged to make use of ancient sites and historic buildings and objects in their history lessons, it was not until relatively recently that we could claim that archaeology in education has been successfully introduced into schools. This welcome phenomenon can now also be seen in a small number of countries across the world, carried out by museums and heritage organizations with historic sites open to the public and to educational institutions. This case study will discuss the areas that have had the most impact on the introduction of archaeology into the National Curriculum subject of history in primary and secondary schools. The case study will conclude with thoughts on the future of archaeological education.

The beginning of archaeology in schools

Although we have a long history of archaeological endeavor in the UK, it was not until the 1920s that discussions about the place of archaeology in education began. Archaeologists criticized the way in which history teachers often ignored the prehistoric period and the work of archaeologists. There was, in fact, no shortage of the government's Board of Education recommendations to teachers to make use of archaeological evidence, especially on school trips (Cannadine et al. 2011:23-25).ⁱⁱⁱ

In 1943, a conference was held at the IoA in London about the way forward for archaeology (once the war was over) and the formation of a new body, the Council for British Archaeology (CBA), which could represent archaeological opinion (IoA 1943). One of the CBA's aims has always been to ensure the recognition of archaeology in education. The CBA set up a Schools Committee in 1975 and employed an Education Officer from 1977. It was in the 1970s and 1980s that evidence-based history teaching was first introduced into schools, and archaeological organizations, including the CBA, started to produce teaching and learning resources. The CBA also began to lobby the government to ensure a place in the forthcoming National Curriculum.

Archaeology in the school curriculum

Archaeology will rarely be a subject in its own right, except perhaps at the later examination stage of secondary school. The stimulus for archaeology to become an accepted part of studying history in schools was the introduction of the National Curriculum in Britain in 1999, which, in its History document, made specific reference to the need to study physical evidence in "artefacts, museums, buildings and sites" (DfEE/QCA 1999:94). One of the effects of this was that cultural organizations adopted

a more considered approach to formal and informal education. Museums, art galleries, and archives responded quickly to the opportunities the National Curriculum offered over a range of subjects, not just history. Heritage organizations that were responsible for sites, historic monuments, buildings, and landscapes were slower to see themselves as providers of education, despite the numbers of school groups that travelled to their properties. Museums were the first to address the needs of visitors other than adults, in particular families and pre-school children. In later versions of the curriculum, especially in England, the government chose to publish statutory and non-statutory guidance, while leaving other organizations, such as subject associations, to provide resources (Department for Education 2013).

Archaeology, if it is there at all, will most often be included in the school History syllabus. In some countries, archaeology may be found in the social sciences or social studies curriculum, which often include history and geography. Scotland has abandoned school lessons based on individual subjects for three- to eighteen-year-olds and moved to broader curriculum areas, where the traditional subjects of history, geography, and societies are combined into social studies (Table 4). Governments, whether national or federal, often publish a range of guidelines for teachers and students, and sometimes even for parents, as is the case in Alberta (e.g., the Social Studies curriculum documents for Grade 6; Learn Alberta 2018). Some heritage organizations also provide guidance for teachers, lesson plans, and on-site activities linked to a range of subjects.

Table 4. Examples taken from Social Studies requirements (Education Scotland n.d.).

Education Scotland Social Studies: Principles and practice Children and young people, as they participate in experiences and outcomes in social studies, will [for example] • Develop their understanding of the history, heritage, and culture of Scotland, and an appreciation of their local and national heritage within the world. • Broaden their understanding of the world by learning about human activities and achievements in the past and present. • Explore and evaluate different types of sources and evidence (e.g., learning outdoors, field trips, visits to local and national heritage sites, and input by external contributors). Experiences and outcomes • I can use primary and secondary sources selectively to research events in the past. • I can interpret historical evidence from a range of periods to help build a picture of Scotland's heritage and my sense of chronology.

Across the curriculum

Archaeology is an ideal cross-curricular subject and has been used to enhance interest in any area, from math to languages and from science to music. For example, my department in English Heritage published a number of titles for teachers on National

Curriculum subjects and topics in our “Education on Site” series. The Design and Technology curriculum suggested working on structures and buildings within the school grounds, culture, and the wider environment. This could include visits to ancient monuments and, perhaps, doing some experimental archaeology (Barnes 1999). The English curriculum in all the counties in Britain provides good reasons for using non-narrative texts such as leaflets, guidebooks, and information panels observed during a visit to an ancient monument or a museum (Collins and Hollinshead 2000). Cadw, the national heritage organization in Wales, like its counterparts in England, Scotland, and Northern Ireland, encourages schools to use the monuments and buildings in its care for learning about a range of subjects. A good example is “KS2 Castles: A Literacy Resource” for use with classes of 11 to 12-year-old students. The book’s activities include using castles for filmmaking, creative writing, and creating a guidebook (Cadw n.d.).

Learning outdoors

The tradition of using the outdoors as a resource for teaching has been well established in the UK since the late 19th century. Whole classes of children went on ‘nature rambles’ and collected flowers and objects for closer examination in the classroom. A Board of Education report in 1905 recommended “visits to ‘historic spots’ such as castles, abbeys, battlefields or hill camps” (Cannadine et al. 2011:24). In 1909, Welton, Professor of Education at Leeds University, helpfully wrote in his textbook for trainee teachers,

If pupils, then, are to be taken to see the remains of a castle or a monastery, they should be prepared to examine them intelligently, by means of a lesson in school which brings out the purpose such buildings served, and the kind of structure adapted to secure it (Welton 1909:270).

The problem with outdoor learning in practice is that many teachers are nervous about teaching beyond their own classrooms. This is partly because taking children and students out to, say a castle, has been seen as a ‘school trip, a summer outing’ rather than as part of regular school work. The Office for Standards in Education (Ofsted) published this as part of a report into schools’ learning history outside the classroom:

When planned and implemented well, learning outside the classroom contributed significantly to raising standards and improving pupils’ personal, social and emotional development. Learning outside the classroom was most successful when it was

an integral element of long-term curriculum planning and closely linked to classroom activities (Ofsted 2008:5).

More often than not though, visits to outdoor ancient sites have been badly conceived, ill planned, and not followed up back at school. Few teachers in the UK, in their initial or in-service training courses, have been educated about learning outside the classroom. Today, outdoor learning is increasingly promoted to fulfil the requirements of curricular subjects in schools. School groups can have direct learning experiences, whether walking in the hills, or visiting an ancient site or landscape, or a local historic building, rather than learning from secondary sources in a classroom. Well over a million students in organized school groups visit historic sites in the UK every year. Guidelines and services about curriculum-based visits are offered by most of the organizations and museums that care for the UK's historic monuments, buildings, and museums. The change in what teachers can do with that visit to an ancient site has been partly brought about by heritage managers (so named as they are not always educationalists) providing a range of different learning materials. They can show teachers that they can conduct self-guided visits and not rely solely on guided tours from site and museum staff. These teaching resources range from the generic to the site specific (Historic Scotland 2018a, 2018b). Part of newer resources for teachers from Scotland provides a good example of how the curriculum has been studied and well-used in the promotion of learning outdoors (Table 5).

Table 5. Part of the guidance for teachers in using subjects across the curriculum when taking school groups to ancient sites (Forestry Commission Scotland 2017).

Activity	Curriculum Areas	Outcomes
A visit to a local archaeological or historic site	Social Studies: People, past events and societies	I can use primary and secondary resources selectively to research events in the past.
		I can research historical evidence from a range of periods to help build a picture of Scotland's heritage and my sense of chronology.
	Mathematics	I can use the common units of measure, convert between related units of the metric system and carry out calculations when solving problems.

Learning from objects

Before the introduction of the National Curriculum, English Heritage was the first (1990) to publish "Learning from Objects," which became the most influential source for heritage educators and school teachers (Durbin et al. 1996). Finds from archaeological excavations are now often used in workshops, activities, and open days by museums, as well as at excavations and monuments open to the public (Corbishley 2015:126). Since the introduction of a National Curriculum, objects are now regularly used by schools, in particular (though not exclusively) at the primary level. Object handling, from any period or culture, is useful in developing skills such as observing and examining; developing knowledge, such as the way people viewed their world; and developing concepts such as chronology (Durbin et al. 1996:4-6). Schools often ask pupils to bring in objects from home when they are studying popular periods, such as the Victorians and the Second World War. Most museums and heritage sites will arrange object handling for school groups during term time and for family groups over the school holidays. Objects are also often used by museums (e.g., Colchester and Ipswich Museums 2018) as part of therapeutic sessions for people with learning disabilities and for older people when they are talking about and remembering their own pasts (Jacques 2007). Activities with objects are often introduced through games involving mystery objects (Corbishley 2011:245-247).

Teaching teachers

Proponents of archaeological education have long sought to address the problems of teacher training. They have identified areas in the curriculum that require or suggest the use of physical evidence for teaching history, from prehistory to the present day. For years, some archaeologists and archaeological organizations have been reaching out to teachers in schools. They see the main problem in the initial teacher-training stage where, for example, history does not receive as much attention as other subjects or that teacher trainers are not trained in the effective use of the resources of the physical elements of the past: the historic environment and artifacts (Copeland 1999:79-86; Kendall et al. 2006; Stone 2004:4). Teacher training can also be delivered as in-service training for school teachers. Some national heritage organizations and museums in the UK provide effective in-service teacher-training courses and workshops, which link their own monuments and collections to different National Curriculum subjects.

The future of archaeology in education

Whilst the National Curriculum theoretically introduced archaeology into schools' history curricula by encouraging evidence-based history teaching using sites and objects, this

has not always been the case in practice. The history curriculum's reliance on sources has long meant texts. Corbishley's experience, both in training teachers and working within the classroom, has been that teachers appreciate the assistance of archaeologists in using and interpreting both objects and sites. At the same time, by specifying the need to work with archaeological material, the National Curriculum has helped museums and heritage sites to create more focused activities for school groups, facilitating an understanding of both their own 'unique selling points' and the needs of teachers. Museums and sites have been instrumental in encouraging teachers to take learning out of the classroom.

Corbishley's view for the future is hopeful. We do need to ensure that our work is sustainable. But how? We must continue, as has been done in the UK, to persuade governments to take notice of our concerns about what is included and left out of statutory curricula. We should encourage and support archaeologists with an interest in education. It can also be sustainable if universities allow the development of courses in CRM, museum studies, and public and community archaeology—all of these degrees should, in Corbishley's view, include education (see Case Study 2 above).

Conclusion

The charge we accepted by participating in the 2017 Chacmool Conference was to say something about where education and pedagogy in archaeology might be in 50 years. The authors of this article are optimistic. We see in the three case studies presented here ample evidence for creative and ongoing adaptation in curriculum design and delivery. In particular, we see archaeologists and archaeological educators building on the sturdy foundations of general public appreciation for and fascination with archaeology. We, collectively, are harnessing archaeology's longstanding popular appeal while also incorporating interests in the many extra-academic/scientific values embedded in what archaeologists study and the knowledge created thereby. These values include lessons and perspectives on the intimate links between human and non-human (environmental) systems; on the therapeutic potential of objects and sites that materialize personal and cultural connections across times and spaces; and, of course, on education itself and of archaeology as an exceptional context for learning about everything from biophysical sciences to community sustainability (Schaepe et al. 2017). We also see our colleagues readily adopting technologies for distance and online learning (particularly in recent times): tools for expanding and democratizing learning and teaching "spaces" (Welch 2020).

What's needed to maintain, or even accelerate, the adaptation of archaeology and archaeological educators in response to coming challenges and opportunities is a more difficult question. We foresee the need to pursue and prioritize

- The use of primary physical evidence in schools as required elements of history and social studies curricula, as well as biophysical science studies. Archaeological evidence should be used, where appropriate, along with evidence from historic documents.
- Ethical obligations on the part of all archaeologists to open projects and, where appropriate, their laboratories to include educational and other participatory programs for elementary/secondary schools and other sectors of the community.
- More relevant explications of connections among objects displayed in museums and their archaeological contexts. What cascades of improbable events brought those things into visitor focus?
- Displays and events in museums and at historic sites that include explanations of archaeological processes.
- Training and professional development partnerships among academic and HRM archaeologists, and between archaeologists and the many audiences and clients for archaeological services and knowledge.

These and other opportunities await. Our collective capacity—as researchers, teachers, and citizens interested in archaeology—to inspire and guide future generations to appreciate archaeology is the sole guarantor of a bright future for the study of the amazing relationship between people and the material legacies we create.

References

Barnes, Jonathan

1999 *A Teacher's Guide to Design and Technology and the Historic Environment*. English Heritage, London, England.

Cadw

n.d. KS2 Castles: Literacy Education Resource. Electronic document, <https://cadw.gov.wales/sites/default/files/2019-05/140804KS2literacyen.pdf>, accessed October 02, 2019.

Cannadine, David, Jenny Keating, and Nicola Sheldon

2011 *The Right Kind of History: Teaching the Past in Twentieth-Century England*. Palgrave Macmillan, Basingstoke, England.

Cleere, Henry L.

1989 *Archaeological Heritage Management in the Modern World*. Unwin Hyman, London, England.

Colchester and Ipswich Museums

2018 Community Projects: Memory Lane. Electronic Document,
<https://cimuseums.org.uk/project/memory-lane/>, accessed September 18, 2019.

Collins, Fiona, and Liz Hollinshead

2000 *English and the Historic Environment*. English Heritage, London, England.

Copeland, Tim

1999 Past Experience – the view from teacher education. In *Communicating Archaeology: Papers Presented to Bill Putnam at a Conference held at Bournemouth University in September 1995*, edited by J. Beavis and A. Hunt, pp. 79-86. Bournemouth University School of Conservation Sciences and Oxbow Books, Bournemouth and Oxford, England.

Corbishley, Mike

2011 *Pinning Down the Past: Archaeology, Heritage, and Education Today*. Boydell Press, Woodbridge, England.

2015 Object Lesson in Evidence-Based Learning. In *Darwin-Inspired Learning* edited by C. J. Boulter, M.J. Reiss and D.L. Sanders, pp. 118-129. Sense Publishers, Rotterdam, The Netherlands.

2019 The World Curriculum Project. *E-dialogos* 07:20-25. Electronic document,
https://drive.google.com/file/d/1W0qNmsQtQnaDZg97_aP8EnbuaN9Nmvpq/view
, accessed April 7, 2020.

Department for Education

2013 National Curriculum in England: History Programmes of Study. Department for Education, London, England. Electronic document,
<https://www.gov.uk/government/publications/national-curriculum-in-england-history-programmes-of-study/national-curriculum-in-england-history-programmes-of-study>, accessed September 18, 2019.

Department for Education and Employment and Qualifications and Curriculum Authority (DfEE/QCA)

1999[2004] The National Curriculum: Handbook for Secondary Teachers. DfEE/QCA, London, England. Electronic document,
<http://webarchive.nationalarchives.gov.uk/20130402165809/https://www.education.gov.uk/publications/eOrderingDownload/QCA-04-1374.pdf>, accessed September 18, 2019.

Durbin, Gail, Susan Morris, and Sue Wilkinson

1996[1990] *A Teacher's Guide to Learning from Objects*. English Heritage, London, England.

Education Scotland

n.d. Curriculum for Excellence Social Studies: Principles and Practice. Education Scotland, Livingston, Scotland. Electronic document, <https://education.gov.scot/scottish-education-system/policy-for-scottish-education/policy-drivers/cfe-%28building-from-the-statement-appendix-incl-btc1-5%29/Principles%20and%20practice>, accessed September 18, 2019.

Elston, Robert G.

1997 Issues Concerning Consulting Archaeologists. *SAA Bulletin* 15(5):no page numbers.

Ferris, Neal, and John R. Welch

2014 Beyond Archaeological Agendas: In the Service of Sustainable Archaeology. In *Transforming Archaeology*, edited by S. Atalay, L. R. Clauss, R. H. McGuire, and J. R. Welch, pp. 215–238. Left Coast Press, Walnut Creek, CA.

Forestry Commission Scotland

2017 Outdoor Archaeological Learning: An Outdoor Learning Resource for Teachers. Forestry Commission Scotland, Edinburgh. Electronic document, <https://forestryandland.gov.scot/images/corporate/pdf/outdoor-archaeological-learning-resource.pdf>, accessed October 02, 2019.

Harrison, Alan

2017 *Skills, Competencies and Credentials*. Higher Education Quality Council of Ontario, Toronto, Canada.

Hawkes, Jacquetta

1982 *Mortimer Wheeler: Adventurer in Archaeology*. Weidenfeld & Nicolson, London, England.

Historic Scotland

2018a Themed Resources for Teachers. Electronic document, https://www.historicenvironment.scot/learn/learning-resources/teaching-resources/#themed-resources_tab, accessed September 18, 2019.

2018b Site Guides for Teachers. Electronic document, https://www.historicenvironment.scot/learn/learning-resources/teaching-resources/#site-guides_tab, accessed September 18, 2019.

Institute of Archaeology (IoA)

1943 *Conference on the Future of Archaeology*. Occasional Paper no. 5. University of London, Institute of Archaeology, England.

Jacques, Claire

2007 Easing the Transition: Using Museum Objects with Elderly People. In *The Power of Touch: Handling Objects in Museum and Heritage Contexts*, edited by E. Pye, pp. 153-161. Left Coast Press, Walnut Creek, CA.

Kendall Sally, Jenny Murfield, Justin Dillon, and Anne Wilkin

2006 *Education Outside the Classroom: Research to Identify What Training is Offered by Initial Teacher Training Institutions*. National Foundation for Educational Research. Electronic document, <https://www.nfer.ac.uk/education-outside-the-classroom-research-to-identify-what-training-is-offered-by-initial-teacher-training-institutions/>, accessed September 18, 2019.

Lawson, John, and Harold Silver

1973 *A Social History of Education in England*. Methuen, London.

Learn Alberta

2018 My Child's Learning: A Parent Resource. Electronic document, http://www.learnalberta.ca/content/mychildslearning/grade6_social.html, accessed September 18, 2019.

McManamon, Francis P. (editor).

2018 *New Perspectives in Cultural Resource Management*. Routledge, New York, NY.

Messenger, Phyllis Mauch, and George S. Smith (editors).

2010 *Cultural Heritage Management: A Global Perspective*. University Press of Florida, Gainesville.

Nicholas, George P., and Nola Markey

2003 Notes from the Underground: Some Thoughts on "the Future Management of Archaeological Resources." *The Midden* 34(3):7–13.

Office for Standards in Education (Ofsted)

2008 *Learning Outside the Classroom: How Far Should You Go?* Electronic document, <http://dera.ioe.ac.uk/9253/>, accessed September 18, 2019.

QS University Rankings

2020 QS University Rankings: Archaeology. Electronic document, <https://www.topuniversities.com/university-rankings/university-subject-rankings/2020/archaeology>, accessed April 15, 2020.

Schaepe, David, Bill Angelbeck, David Snook, and John R. Welch

2017 Archaeology as Therapy: Connecting Belongings, Knowledge, Time, Place, and Well-Being. *Current Anthropology* 58(4):502-533

Simon Fraser University

2019 Welcome to the Department of Archaeology, <http://www.sfu.ca/archaeology.html>, accessed September 21, 2019.

Stone, Peter

2004 Introduction: Education and the Historic Environment into the Twenty-First Century. In *Education and the Historic Environment*, edited by D. Henson, P. Stone, and M. Corbishley, pp. 1-10. Routledge, London, England.

University College London

2018a Institute of Archaeology. Electronic document, <http://www.ucl.ac.uk/archaeology>, accessed September 18, 2019.

2018b Public Engagement Unit. Electronic document, <http://www.ucl.ac.uk/culture/Public-Engagement/about>, accessed September 18, 2019.

Webster, Chris

2014 *Field Archaeologist's Survival Guide: Getting a Job and Working in Cultural Resource Management*. Left Coast Press, Walnut Creek, CA.

Welch, John R.

2020 I ♥ Archaeology. In *Archaeologies of Heart and Emotion*, edited by Kisha Supernant, Jane Eva Baxter, Natasha Lyons, and Sonya Atalay, pp. 23-37. Springer Nature.

Welch, John R., and Neal Ferris

2014 "We Have Met the Enemy and It is Us": Transforming Archaeology through Sustainable Design. In *Transforming Archaeology*, edited by S. Atalay, L. R. Clauss, R. H. McGuire, and J. R. Welch, pp. 91–113. Left Coast Press, Walnut Creek, CA.

Welch, John R., David V. Burley, Jonathan C. Driver, Erin A. Hogg, Kanthi Jayasundera, Michael Klassen, David Maxwell, George P. Nicholas, Janet Pivnick, and Christopher D. Dore
2018 Digital Bridges Across Disciplinary, Practical and Pedagogical Divides: An Online Professional Master's Program in Heritage Resource Management. *Journal of Archaeology and Education* 2. Electronic document, <https://digitalcommons.library.umaine.edu/jae/vol2/iss2/1>, accessed April 5, 2020.

Welton, James
1909 *Principles and methods of teaching*. University Tutorial Press, London, England.

ⁱ The handbook outlines the course and its requirements in detail, with references to recommended reading works. Readers of this paper may obtain a copy of the latest course outline by contacting Mike Corbishley at m.corbishley@ucl.ac.uk.

ⁱⁱ Research based on studies by M. Corbishley was carried out as part of The World Curriculum Project. Information can be obtained from him and a paper is forthcoming in the next issue *e-dialogos* 07/2018 (see References).

ⁱⁱⁱ This important research has been published as a book but many of the resources referred to in this book are available on the History in Education website at <http://www.history.ac.uk/history-in-education/about.html>.