Department for Business & Trade

Analysis

Education Export Data: Scoping Exercise

Published 9th March 2023

LSE Consulting

This is a report of research carried out by LSE Consulting, on behalf of the Department for Business and Trade (DBT).

This report was authored in the Spring of 2022. All data in this report, including estimates of UK revenue from education-related exports and transnational education (TNE) activity, are based on provisional data made available to the authors (LSE) in Spring 2022 when the report was completed. Data revisions and methodological differences mean that these estimates may differ from subsequent estimates published by the Department for Education (DfE).

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Acknowledgements: The team at LSE Consulting would like to thank Matthew Needham, Darius Rakhshafar, Nikos Tsotros, James Wignall, Sarah Chidgey and Samuel Dickson at the Department for Business and Trade, and Yashvi Shah and Hannah Denley at the Office for National Statistics for their invaluable inputs during the project, comments and peer review. We would like to thank the participants in the Quarterly education export workshops and the interviewees for providing invaluable information for completing the research.

Errors and omissions remain the responsibility of the authors alone.

This document is prepared by the Trade Policy Hub (TPH) which is part of LSE Consulting. LSE Consulting is set up by The London School of Economics and Political Science to enable and facilitate the application of its academic expertise and intellectual resources.

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List of Abbreviations

ABS	AUSTRALIAN BUREAU OF STATISTICS'
AoC	Association of Colleges
AOR	Aggregate Offshore Record
BoP	Balance of Payments
BESA	British Educational Suppliers Association
CPD	Continuing Professional Development
DfE	Department for Education
DBT	Department for Business and Trade
ELT	English Language Training
EBOPS	Extended Balance of Payments Services Classification
ESFA	Education and Skills Funding Agency
FATS	Higher Education Foreign Affiliates Trade in Services
FE	Further Education
GATT	General Agreement on Tariffs and Trade
HEIs	Higher Education Institutions
HESA	Higher Education Statistics Agency
HS	Harmonised System
ICT	Information and Communications Technology
IPR	Intellectual Property Rights
IT IS	ONS' International Trade in Services
ISIC	International Standard Industrial Classification
MOOCs	Massive Open Online Courses
MSITS	Manual on Statistics of International Trade in Services
NAICS	North American Industry Classification System
OECD	Organisation for Economic Co-operation and Development
Ofqual	Office of Qualifications and Examinations Regulation
ONS	Office for National Statistics
SaaS	Software as a Service
SEND	Special Educational Needs or Disability
SIES	Student Income and Expenditure Survey
TiVA	Trade in value-added
TNE	Transnational Education
WCO	World Customs Organisation
WIOD	World Input-Output Tables
WTO	World Trade Organisation

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Executive Summary

International education has always occurred via a breadth of goods, services and business models. In view of this variety, conventional statistical approaches may struggle to quantify the value of UK education exports or provide a satisfactory level of granularity across certain subsectors.

A wealth of scholarship has attempted to fill this research gap and a series of publications by the DfE provide the most comprehensive figures to date.

This project, funded by the Department for Business and Trade (DBT), has conducted a critical review of the existing methodology. Market trends, international best practices and qualitative interview findings have been synthesized to offer several updates for consideration.

Firstly, the existing taxonomy for education exports has been reformatted, with products grouped into goods and services by modes of supply. As well as distinguishing between business models, this revision facilitates comparisons with other established metrics, such as national statistics.

Secondly, the DfE's approach to quantifying various product groups has been reviewed against four distinct criteria. In some instances, novel data sources allow for revision or refinement. Updated methodological approaches for measuring products such as *English Language Training (ELT)*, *Further Education (FE) course fees* and *Higher Education Foreign Affiliates Trade in Services (FATS)* have improved the quality of these figures. Where reliable data is difficult to locate or does not exist, constructive suggestions for statistical collection have been made.

Thirdly, the revised taxonomy has identified new product groups such as *asynchronous online learning and platform learning, HE providers' other course fees* and *subscriptions to academic journals.*

These amendments have resulted in a revised estimate for past UK education exports. Specifically, cross-border exports are estimated at £24.5 billion (including the living expenditure of international students) for 2019. This figure represents a small increase on the DfE's observation for "education exports" at £23.0 billion for the same year.

At this level, education exports eclipse those of food and drink, pharmaceuticals and legal services, as measured by both ONS and major industry bodies before the pandemic (ABPI, 2021; FDF, 2021; ONS, 2021; The City UK, 2021).

In addition to these cross-border exports, education services provided by UK foreign affiliates (subsidiaries, overseas campuses etc.) were valued at £1.8 billion for 2019. Although, other metrics indicate that this may be something of an underestimate in the absence of reliable data.

As well as revising existing figures, this report estimates that cross-border education exports fell to £22.6 billion in 2020. Whilst student numbers actually increased, living expenditure is thought to have diminished as a consequence of the unprecedented restrictions necessitated by the pandemic. Conversely, education provided by UK foreign affiliates increased to £2.1 billion in the same year.

Figures for 2020 should be interpreted with caution and are best regarded as an "experimental estimate". For some product groups, estimates can be revised once certain HEIs (Higher Education Institutions) release their finance data in June 2022. Elsewhere, for living expenditure exports, some adjustments are made to account for the impact of the pandemic. However, these adjustments are best regarded as an approximation as visa data collection was impeded by COVID19 (Home Office, 2022).

Similarly, some caution should be exercised when comparing UK education export figures directly with international equivalents. Inevitably, these figures draw on different methodologies.

Finally, this report also identifies avenues for further research and recommendations for improving the existing data. Significant knowledge gaps persist in further education, education-related equipment (goods, software etc.), foreign affiliates trade and other sub sectors. The introduction, refinement or update of various surveys offers the best opportunity to fill these gaps. A full outline of recommendations is available in the conclusion.

1. Introduction

Education exports and transnational education (TNE) are a strong offensive interest for the United Kingdom. As part of the Government's International Education Strategy, the Department for Business and Trade (DBT) and the Department for Education (DfE) have publicly committed towards a policy target of increasing education exports from £20 billion a year in 2016, to £35 billion by 2030.

The internationalisation of education has always occurred as an amalgamation of various goods, services and business models. Examples include the direct provision of goods and services, greenfield FDI, franchising agreements and platform-based learning. As a consequence of this diversity, current statistical approaches may not be fully future-proof or capture the true extent of UK education exports. Yet, a relevant, up-to-date and repeatable metric is imperative for the government to monitor progress towards its objectives.

Over the last two decades, numerous research projects have been commissioned to establish a metric that captures the competitiveness and internationalisation of the UK education sector. A series of publications by the DfE provide the most robust figures to date for UK education exports. However, a review of international best practices and market developments offer prospective methodological updates for consideration.

2. Existing research on education exports

2.1 Trade nomenclature on education

2.1.1 Nomenclature on goods

In general, goods "exports" are defined in accordance with pre-existing definitions from GATT/WTO, WCO and domestic laws. However, it should be noted that customs data (based on HS6 or UK/CN-8/10 nomenclature) cannot be used to directly measures trade in education goods. Instead, estimates are made on survey-based assumptions.

For example, categories of "printed books" (CN 4901 1000) and optical data storage media (CN 8523 4910) do not distinguish educational literature or software from other genres. Hence, a reliance on a survey-based approach is inevitable. It is anticipated that the majority of relevant educational goods would be recorded under these two headings.

Some items are distinguished by educational purposes under trade nomenclature. These include "instruments, including those for designed for educational purposes" (HS 9023) and "interactive education devices designed for

children" (CN 9503 0087 or CN 8543 7007). The UK has also designated certain tariff lines under HS99 (that are determined by every WCO member) for school outfits and educational materials. However, these distinguished items are likely to represent a minority of UK education goods exports.

2.1.2 Services exports

In Balance of Payments statistics, services exports are defined as sales of services from a resident to a non-resident. This definition covers three categories (or 'Modes of Supply') of service trade: Modes 1, 2 and 4. In the context of education services:

- Mode 1 is the cross-border supply of education. This includes the delivery of distance education, correspondence courses, royalties and licenses on educational products, IPR remittances and educational software as a service (SaaS).
- Mode 2 is the onshore consumption of education by international students. Mode 2 exports are typically defined as "education-related travel" and therefore encompass non-resident students' expenditure on tuition fees *and* living expenses, such as food, accommodation, local transport and health services (MSITS, 2010; 51-52). These goods and services may be purchased by the persons concerned or by another party on their behalf. The inclusion of living expenses makes it difficult to directly compare education services trade with other, non-travel services.
- Mode 4 is the temporary (a period of less than twelve months) provision of education by a UK resident overseas. This includes some educational consultants, guest lecturers, teacher secondments and fly-in quality assurance checks at educational institutions.

In this report, we follow the UN's Manual on Statistics of International Trade in Services (MSITS, 2010) which extends the definition of UK services 'exports' to also include services supplied by UK-owned affiliates abroad (Mode 3 or 'commercial presence'). Mode 3 can be estimated using Foreign Affiliate Statistics (FATS).

In the context of education, Mode 3 is the provision of education through a commercial presence in an overseas territory. A commercial presence typically refers to a locally established affiliate, subsidiary or representative office of a UK-owned and controlled company (WTO, 2021). Mode 3 covers a significant proportion of TNE, including the majority of products supplied by overseas campuses.

It is important to note that Mode 3 is *not* cross-border trade in a Balance of Payments sense. This is because the sales of foreign affiliates represent transactions between two residents of the same country, rather than sales between a resident and a non-resident (which is the standard, Balance of Payments, definition

of international trade).[1] However, evidence suggests that Mode 3 is the dominant mode of supply for UK services, accounting for more than half (57%) of total UK services 'exports' in 2020 (ONS, 2022a, 2022b). Ignoring this component may therefore lead to an underestimation of the importance of education services – hence in this report we consider all four modes of supply.

Mode 5 is an experimental concept that refers to the indirect trade of services as inputs in manufacturing exports. A valuation can be analytically derived via measurements of trade in value-added, which are displayed by input-output tables, such as WIOD or OECD TiVA. Besides educational content that is supplied via ICT hardware made in the UK, it is difficult to specify practical examples of mode 5 education exports. Indeed, the education industry tends to play a bigger role in other services sectors that also rely heavily on human capital.

2.1.3 Defining the sectoral scope of education

As well as establishing the scope of "export", we must also define "education". If the project considers broadening the scope of education, credibility mandates that we follow an objective definition. Subjective case-by-case decisions would inevitably raise questions as to why certain sub-sectors or activities are included, while others are not.

Following the principles of objectivity, we may be referring to:

- Education as an *industry classification* (based on national accounts).
- Or an expanded definition based on *educational activity,* regardless of the industry or sector in which that activity technically occurs.

Beginning with the former, current practices employed by the Office for National Statistics (ONS) and Companies House follow the International Standard Industrial Classification (ISIC, 2008), Rev.4. Observing these guidelines, the "education sector" is outlined under Chapter 85 at the two-digit level. A summary of the Chapter's scope is displayed below, in Table 1.

[1] *The profits that UK-owned affiliates make from sales abroad and repatriated back to the UK are recorded as a credit item in the income (FDI) account of the Balance of Payments.*

Table 1: Industry classification – ISIC 85

Three-digit Level	Four-digit Level	Summary
851 Pre-primary and primary education	8510 Pre-primary and primary education	The provision of instruction that gives students a sound basic education. Also includes special education for disabled students at this level and the provision of literacy programmes for adults.
852 Secondary education	8521 General secondary education	General school education corresponding with a period of compulsory school attendance and, in principle, the opportunity to access to higher education
	8522 Technical and vocational secondary education	Education below the level of higher education which typically emphasizing subject-matter associated with present or prospective employment. Instruction can occur in training facilities, educational institutions, the workplace, or the home, and through correspondence, television, internet, or other means.
853 Higher education	8530 Higher education	The provision of post-secondary non-tertiary and tertiary education, including granting of degrees at baccalaureate, graduate or post-graduate level. The requirement for admission is at least a high school diploma or equivalent general academic training.
854 Other education	8541 Sports and recreation education	The provision of instruction in athletic activities to groups or individuals, such as by camps and schools. This class does not include activities of academic schools, colleges and universities.
	8542 Cultural education	The provision of instruction in the arts, drama and music. Such instruction does not lead to a professional diploma, baccalaureate or graduate degree.
	8549 Other education n.e.c.	includes the provision of instruction and specialized training, generally for adults, not comparable to the general education in groups 851–853. Includes professional examination review courses, language instruction, computer training, driving and flying schools etc.

Three-digit Level	Four-digit Level	Summary
855 Educational support activities	8550 Educational support activities	Provision of non-instructional services that support educational processes or systems. Includes educational consulting, testing and evaluation systems, educational guidance counselling services etc.

Source: (ISIC, 2008)

A sector-based approach simply refers to "education exports" as an instance when an entity, defined under the industry classification above, supplies an export. Such an unbending and conventional definition reduces the risk of double counting exports between sectors, enhances replicability and is entirely appropriate for national accounts.

However, previous metrics (including DfE) have already incorporated other non-education sector activities. In this vein, educational trade could encompass any goods or services where the primary purpose of the UK supplier is to transfer know-how and skills (rather than to inform or entertain) to an individual or group of natural persons located outside the UK. The primary purpose of "transferring a skill" would help to distinguish between the following examples:

- An app supporting studies for continuing professional development (education) vs an app containing non-instructive data (information).
- A school textbook in modern history (education) vs a non-fictional title in the history genre (entertainment).

An activity-oriented definition may be more in line with "education" semantically, as a reference term in business or policy. Hypothetically, it would envelop a broader range of exporting activities (although these may not be quantifiable), including:

- internal education, certain training and certification activities
- Various types of product training (use of software, machinery, creative industries, etc.).
- Certain non-publishing IPR revenues (licensing of intangibles and trademarks)
- Ed-tech, which could refer to both:
    - Software suites tailored to be used by educators and education industry (lecture scheduling, skills testing or teaching tools), i.e., B2B.
    - Apps directly designed for skills development, i.e., B2C.
- Publishing and streaming revenues by traditional and non-traditional educators (e.g., individuals, independent practitioners) on online platforms, including revenues generated via two-sided markets.
- Other hereto non-included activities identified between the relevant international stakeholders.

Data availability may well be an issue for some of these activities. Equally, an activity-based approach could (if strictly applied) exclude certain education-related activities, where the primary purpose is not necessarily education (alumni contributions, certain sponsorships etc).

2.2 Discrepancies pending on approach

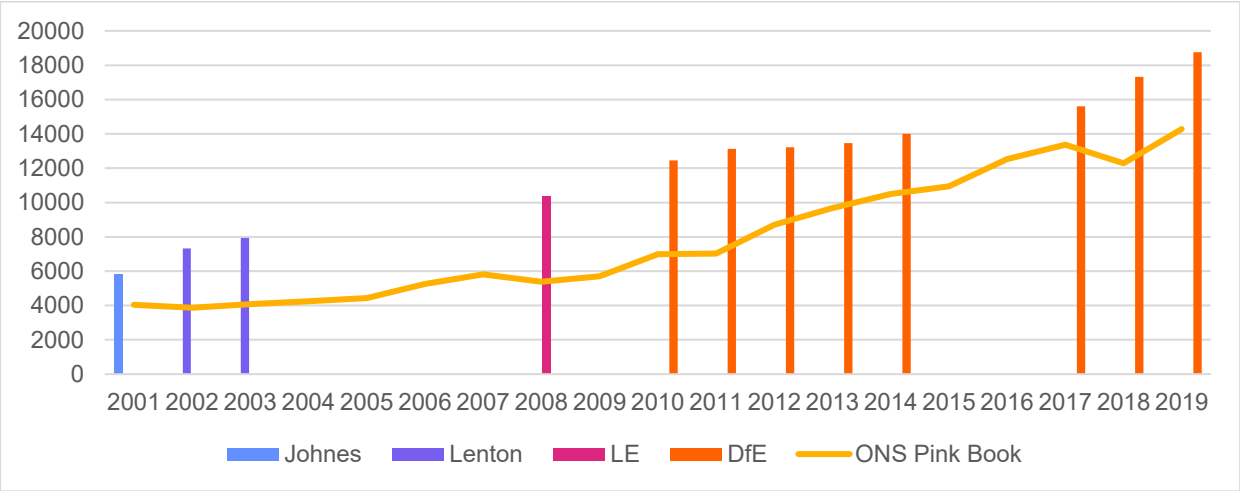
The ONS generally records UK trade in goods and services. Under existing practices, which follow international norms and standards, “education exports” are dispersed across multiple datasets, hidden within broad classifications or potentially overlooked.

The ONS’ International Trade in Services (ITIS) dataset is formatted in accordance with MSITS and the OECD’s Extended Balance of Payments Services Classification 2010 (EBOPS, 2010). Under EBOPS, education services are split between subsectors of travel (SDB2) and, to a lesser extent, personal, cultural and recreational services (SK22). The ITIS survey collects firm-level microdata on exports and imports of services and related products. However, certain sectors are currently excluded, including higher education, travel and transport (ONS, 2020). There are plans to extend the ITIS survey to education providers, but currently, the dataset contains no significant estimate for education services exports.

Elsewhere, the ONS’ Pink Book dataset does provide an estimate for education-related travel exports (SDB2) between 1987 and 2021. In theory, this should encompass all of the UK’s mode 2 education exports. The data is based on responses to the International Passenger Survey (IPS) and fee income figures compiled from the Higher Education Statistics Agency (HESA). However, there have been measurement issues with the IPS’ weighting such that figures have proven under-representative of certain groups, like Chinese resident visitors (ONS, 2020). Students’ attempts to recall the entirety of their annual expenditure at the departure gate are also subject to cognitive bias. Similarly, certain students may not self-identify where education is regarded as secondary to their trip. Subsequently, Pink Book data may *underestimate* education-related travel exports over time, as indicated by Figure 1.

Lastly, the ONS’ UK Trade in Goods dataset does provide an estimate for goods exports occurring under the education sector, as defined by Chapter 85 of the ISIC. Their methodology draws on UK customs data (based on HS/CN) and survey responses (see above).

Figure 1: UK education-related travel exports (£ millions)



Source: (ONS, 2020; Johnes, 2004; Lenton, 2007; London Economics, 2011; DfE, 2017; DfE, 2019; DfE, 2020; DfE, 2021)

Combined, national statistics may not provide a comprehensive and detailed taxonomy for UK education exports. Moreover, the datasets discussed focus exclusively on balance of payments. While the ONS is developing its foreign affiliates trade statistics, existing data contains missing observations for multiple years (OECD, 2021). In this vein, Mode 3 education exports are currently unaccounted for.

The ONS is not alone in this regard. An international comparison by the OECD (2002) has highlighted the methodological difficulties of measuring "education exports" that span a variety of goods, services and business models.

The Australian Bureau of Statistics' (ABS) international trade in goods and services dataset is frequently cited as a desirable example of accurate and updated education exports statistics (HEPI, 2017). However, this dataset is also based on balance of payments and Mode 3 trade is subsequently excluded. The ABS has started to survey Australian foreign affiliates, with export figures provided for 2018-19. However, no data was published for the Education and Training Sector (DFAT, 2021).

Like the UK and Australia, Canada records an annual estimate for its education services exports in accordance with balance of payments of data. Statistics Canada has also begun to survey Canadian multinationals abroad. Mode 3 exports are recorded by the North American Industry Classification System (NAICS) for 2016-2018. However, no figures are provided for education (Chapter 51) exports, which are aggregated into "Other Services" (Statistics Canada, 2020).

The EU records an annual estimate for its education services exports in conjunction with balance of payments of data. Eurostat has also recorded Outward FATS statistics from 2014-2018 and "Education" is distinguished as a "statistical classification of economic activities" in its own right (Eurostat, 2021). For these

years, EU statistics provide a comprehensive, annual estimate for education services exports. Although, educational goods exports are not clearly defined in Eurostat's "Trade by commodity and NACE Rev. 2 activity dataset" (Eurostat, 2021).

Like the EU, the US Bureau of Economic Analysis produces figures for its education services exports in conjunction with data on balance of payments *and* majority-owned foreign affiliates (BEA, 2021). As with the EU though, educational goods exports are not clearly defined in the US' implementation of tariff schedules or its "Trade in Goods" dataset (USCB, 2021).

2.3 Comparison of existing metrics

2.3.1 Previous attempts to quantify UK education exports

In view of this international knowledge gap, numerous governments and private sector actors have commissioned projects to ascertain the true value of their country's education exports. A summary of recent British research is available in Table 2.

Initial attempts to define the scope of the UK education and training sector and quantify its export activities include Bullivant (1998) and Rylance-Watson (1999). Johnes (2004) builds on this early research and follows a sector-based definition of education to estimate exports for 2001-2002. His taxonomy is inclusive of Mode 3 delivered TNE. Educational goods are also accounted for under "Educational Equipment". Relative to Chapter 85 of the ISIC, only educational consulting and a handful of smaller subsectors are noticeably omitted. Such is the strength of Johnes' taxonomy, that its contents are replicated in many of the subsequent metrics.

Rather than drawing on national statistics, Johnes compiles export data from various agencies and industry associations. For example, the fees and living expenditure of international students in higher education are collated from studies by HESA, the National Union of Students Welfare Unit, the British Council and the Department for Education and Skills. Elsewhere, estimates for educational publishing exports are based on studies by the Publishers Association, while estimates for educational broadcasting exports are derived from statistics by Channel 4 and the BBC.

In the absence of some data, aspects of Johnes' methodology could be stronger. For example, an arbitrary estimate is made for the provision of private further education. Similarly, estimates for unaccredited ELT are loosely based on the IPS, although the exact methodology is unclear.

Lenton (2007) provides an updated figure for UK education and training exports for 2002-2004. Lenton's taxonomy and methodology are broadly the same as Johnes', with the exception of consulting. Unable to extract educational consulting alone, Lenton takes export figures for business management and consultancy, advertising and market research, research and development, and other miscellaneous business from the ONS' Pink Book dataset. This leads to a relatively large export figure of £27,771 million for 2003-2004, fifty-four percent of which is consulting.

London Economics (2011) also builds on Johnes' taxonomy to estimate UK education and training exports for 2008-2009. They include some useful additions and distinctions. For example, further education TNE is accounted for in its own right.

Like Johnes and Lenton, London Economics collate export figures from a variety of external sources. However, they also survey more than two-hundred educational institutions and private sector organizations. Survey responses provide the basis for numerous data points, including the per-student revenue associated with higher education TNE.

The methodology employed by London Economics is more detailed in places, but not necessarily more accurate. For example, they assume "that half of all part-time international students work… those who do work complete the full 20 hours per week entitlement of non-EU students at the level of the adult national minimum wage" (London Economics, 2011; 31). An estimate for the aggregated earnings of international students is then subtracted from living expenses as an export. As well as being derived from a baseless assumption, earnings from part-time work do not detract from education-related travel exports as outlined in MSITS (2010; 51).

The London Economics methodology was later replicated by the Department for Business, Energy & Industrial Strategy (BIS) in 2013, to estimate UK education exports for 2011. This figure was an essential part of an "accompanying analytical narrative" to the government's "International Education – Global Growth and Prosperity" initiative (BIS, 2013).

Table 2: A summary of previous taxonomies by mode of supply

Product	**mode of supply**	Johnes, 2004	Lenton, 2007	L Econ, 2011	DfE, 2020	ONS, 2021
Educational equipment	Goods Trade	X	X	X	X	X
Consulting (incl. non-educational)	Modes 1 & 4		X			X
Educational consulting	Modes 1 & 4		X			
Educational broadcasting	Modes 1 & 4	X	X	X	X	
Educational publishing	Modes 1 & 4	X	X	X	X	
Qualifications awarding bodies	Modes 1 & 4	X	X	X	X	

Product	**mode of supply**	Johnes, 2004	Lenton, 2007	L Econ, 2011	DfE, 2020	ONS, 2021
Professional qualifications and certifications	Modes 1 & 4	X				
HE IP	Modes 1 & 4			X	X	
IP beyond HE	Modes 1 & 4					
HE research grants	Modes 1 & 4	X	X	X	X	X
HE income from alumni and charitable institutions	Modes 1 & 4			X		
HE consultancy contracts facilities & equipment	Modes 1 & 4			X		
Private sector training	Modes 1 & 4	X	X	X		X
Intra-firm training	Modes 1 & 4					X
HE tuition	Mode 2	X	X	X	X	X
HE living expenditure	Mode 2	X	X	X	X	X
HE other	Mode 2	X	X	X	X	X
FE tuition	Mode 2	X	X	X	X	X
FE living expenditure	Mode 2	X	X	X	X	X
FE other	Mode 2	X	X	X	X	X
ELT tuition	Mode 2	X	X	X	X	X
ELT living expenditure	Mode 2	X	X	X	X	X
ELT other	Mode 2	X	X			X
Independent schools	Mode 2	X	X	X	X	X
Early Years	Mode 2					X
SEND	Mode 2					X
HE TNE revenue	Mode 3	X	X	X		X
FE TNE revenue	Mode 3	X	X	X		
HE TNE remittances	Mode 3				X	
FE TNE remittances	Mode 3				X	
ELT TNE remittances	Mode 3				X	
Schools TNE remittances	Mode 3				X	
Education related FDI	Non-trade, or adjustments			X		
ERASMUS+ (-)	Non-trade, or adjustments				X	

Product	**mode of supply**	Johnes, 2004	Lenton, 2007	L Econ, 2011	DfE, 2020	ONS, 2021
HE scholarships fees (-)	Non-trade, or adjustments	X	X	X	X	
HE scholarships living expenditure (-)	Non-trade, or adjustments			X		

Note. Classification by mode is not definitive. HE = Higher Education. FE = Further Education. ELT = English Language Training. TNE = Transnational Education. (-) = deducted from export figures in authors' methodology.
Source: (Johnes, 2004; Lenton, 2007; London Economics, 2011; DfE, 2020)

2.3.2 Current attempts to quantify UK education exports

The most recent analyses on international education and the UK economy are provided by two reports from London Economics and a series of publications from DfE. The London Economics (2018, 2021) reports are focused on the "costs and benefits of international students to the UK economy". As such, many of the figures cited do pertain to "education exports", including international students' tuition fees and living expenses.

However, as their respective titles indicate, large portions of each report have nothing to do with education exports. In addition to the expenditure of international students, London Economics account for the spending of friends and family coming to the UK to visit these students during their studies. Whilst such spending is certainly an export, it is classified as "other personal travel" (SDB3) rather than "education-related travel" (SDB2), in accordance with MSITS (2010; 52).

Furthermore, London Economics use economic multipliers to estimate the "knock-on" effects of student related expenditure in the wider economy. The indirect and induced impact of such spending clearly falls outside the internationally established definition of an export. The London Economics reports may provide an important contribution to a different debate. With that being said, they do not amount to an accurate estimate for UK education exports. As a consequence, the headline figure of £25,900 million should not be compared to other estimates.

From this standpoint, the DfE publications (2017, 2019, 2020, 2021) provide the most updated figures for UK education exports. Broadly speaking, their taxonomies resemble that of Johnes, with some minor additions. For instance, relative to Johnes, the latest DfE figures (2021) account for IP exports by higher education institutions.

Methodologically, there is slight variation between the four DfE publications. Each takes advantage of new data sources, particularly for Mode 2 exports. Relative to London Economics (2011), the latest DfE figures draw upon exact numbers of EU higher education students provided by HESA. Elsewhere, DfE also uses new data on additional higher education institutions and non-ISC independent schools.

Subsequently, the latest DfE publications are less reliant on arbitrary or incomplete estimates than previous research by other authors.

2.4 Prospective alterations

2.4.1 Measuring "exports"

Given these new sources, DfE's estimate for UK education exports in 2019 is more robust than previous initiatives. Nonetheless, there are areas for improvement. Firstly, it is important to adhere to international best practices when measuring *exports*. Considering Mode 2 exports, the deduction of scholarships and student loans from tuition fee expenditure is inaccurate. As outlined by MSITS (2010; 51), "goods and services may be purchased by the persons concerned or by another party on their behalf… tuition and living costs of a student may be paid by a government" or any other institution, including the provider.

Beyond Mode 2, figures for TNE-related (mainly Mode 3) exports could also be modified. For schools and ELT, the DfE's latest publication only accounts for the repatriated profits of UK-controlled foreign affiliates. This is arbitrarily estimated as ten percent of their sales revenue. Yet, according to MSITS (2010; 110), Mode 3 exports refer to foreign affiliates' *entire* "sales of service" and not just their repatriated profits. Hence, considerations of current account, rather than trade in modes, may have led to a significant *underestimate* of the UK's TNE-related exports.

2.4.2 Refining the current taxonomy

This project is an opportunity to refine the current taxonomy to reflect market trends. In terms of Modes 1 and 4, the DfE's classification and subsequent estimate for Education Products and Services could be revised. Following Johnes, the current taxonomy divides "Education Products and Services" into qualification awarding bodies, education-related publishing, education-related equipment and education-related broadcasting. Broadcasting may have accounted for seven percent of UK education exports in 2001, but today, it represents less than point zero five percent. An updated taxonomy can offer insightful distinctions between important new products.

Particular attention needs to be paid to the UK's bourgeoning "ed tech" sector which, by one estimate, is now worth £3,500 million (Ash-Brown, 2021). Ed tech is something of a blanket term that refers to a host of novel means of provision. It includes (in both B2B and B2C) but is by no means limited to AR-generated virtual classrooms, personalized learning platforms and massive open online courses (MOOCs).

Aside from its role in Mode 2 delivery, many of the exports associated with ed tech are likely captured under "education related equipment". This figure is derived from a survey by the British Educational Suppliers Association (BESA), whose membership is comprised of numerous ed tech firms like Google for Education, Microsoft and Capita. However, given the industry's current dynamism, other products and revenue

streams are likely evading the existing taxonomy. Possible examples include education-related advertising, two-sided business models and language learning apps.

Qualitative interviews also present an opportunity to verify the methodologies employed by various industry associations and external stakeholders in contributing to the DfE publications. For example, ELT is a vast and dynamic sub sector that transcends multiple business models. Stakeholder engagement will allow us to determine the exact coverage of external research, such as the ELT Global Market Report by the Study Travel Magazine.

Elsewhere, a revised taxonomy could better represent diverse business models employed in TNE. The DfE publications currently implement a headcount methodology, where the total number of TNE students enrolled at UK institutions overseas is multiplied by the average per-student revenue, as estimated by outdated research. However, HESA's Aggregate Offshore Record (AOR) offers updated figures for students participating in a range of different business models. Overseas campuses, partner institutions, flexible learning and collaborative provision each incorporate different modes of supply. It seems likely that they will also vary in the revenue generated per student and some, depending on ownership structures, may not count as UK exports at all. A refined taxonomy for TNE seems increasingly appropriate as it accounts for a greater proportion of UK education exports (DfE, 2020).

2.4.3 Gaps and emerging products

Even if we follow the existing literature and a sector-based definition of "education", the DfE's current estimate does seem to overlook certain subsectors. Observing Table 2 and previous scholarship, educational consulting, early years and SEND appear unaccounted for.

Finally, "education" is increasingly an activity (that takes place across many different sectors) rather than an industrial sector in its own right. Asynchronous Online Learning has redefined formal education, not least in the wake of the pandemic. As mentioned above, massive open online courses (MOOCs) have redefined the institutional providers. However, learning via streaming and platform-based businesses is a sizeable commercial phenomenon with novel revenue streams. As the bulk of these education activities take place peer-to-peer, involving UK SMEs and individuals, this gap is of particular interest.

Furthermore, we are quite certain that external "private sector training" could be dwarfed by training provided or procured by UK multinationals. Training could include professional certifications and qualifications, or IT and language training of both foreign and UK staff. However, disentangling educational consulting from consulting more generally has proven methodologically difficult in the past. In most

circumstances, it is also difficult to distinguish whether a UK multinational contracts an education provider to train its domestic or overseas staff.

3. Methodology

3.1 Qualitative interviews and analysis

With a view to providing a relevant, up-to-date and repeatable metric for UK education exports TPH have conducted qualitative interviews with a range of industry stakeholders.

Interviewing is a time-consuming and resource intensive endeavour, which allows a researcher to learn about the participant's experience, by observing, listening, and gathering information that is not directly accessible via desk research. The use of interviews in this project played a number of roles:

- It allowed us to understand the scope of the sector from industry-participants themselves
- It allowed us to test some of the assumptions formulated during the desk research, which we had phrased as action points for each individual conversation
- It allowed us to fill in the gaps with information that is not publicly accessible, or it is not widely distributed
- It allowed us to understand the perception of industry-participants of the existing metrics and its future improvement
- It also allowed us to gather momentum around the project and reignite interest in the subject of education export

The interview process was supported by interview lists, which are tools designed to guide and customise the interviewing process, ensuring that the same general areas of information will be collected from each interviewee. While still allowing for flexibility and adaptability in the data collection process, an interview tool guarantees that detailed and explicit information will be secured from the participant.

For this project we had three common questions. Firstly, as part of the conversation, we asked participants to discuss the current DfE figures and their associated methodology. In particular, we inquired after areas for improvement or expansion. Next, we discussed each organisation's data collection activities and how they have been updated and refined. Key questions revolved around the methodology for data collection, the representativeness of the sample collected, the availability of other sources and metrics. Finally, we wanted to hear of their assessment of potential changes to the metric and tendencies in education exports and TNE, which need to be considered in a new definition. This last part is to make sure that any revised definition is "future-proof".

3.2 Preparation of data for analysis

After the interviews, we followed four steps to integrate interview findings in report:

- Raw data management (working with the words and notes from transcriptions
- Data reduction (the process of selecting, focusing, simplifying, and transforming raw data into workable "chunks" or categories)
- Data analysis and interpretation (the process of analysing data to fill the gaps and reflect the essence of the participants' perspective)
- Data representation (the process of compressing an array of information into an organised pattern of findings that allows for conclusions and recommendations)

The findings of the interviews allowed us to dig deeper into sub-sectoral composition and potential data sources, as well as possible recommendations for future data collection.

4. Findings and Discussion

4.1 Aligning exports with international best practices

Qualitative interview findings are synthesized within the outline of a revised taxonomy.

The existing DfE methodology groups education exports by product and subsector. For instance, the relevant tuition fees, living expenditure, research contracts and IP are all categorised under "Higher Education". Stylistically, this makes sense for domestic statistics and intra-sectoral comparisons, but it is less appropriate for exports and international trade.

As an alternative, a revised taxonomy groups products, where possible, by business model – or modes of delivery. There are two significant advantages to this approach:

- Firstly, it becomes easier to distinguish between revenues based on how a UK firm is choosing to internationalise. "*Cross-border trade"* (goods, services mode 1, 2 and 4) can be broken down to the exportation of goods (like books) or services (like tuition, journal subscriptions or the licensing of IPRs). Under the previous format, elements of cross-border trade, such as distance learning, were included as "TNE". Distinguishing exports by goods and modes of supply will allow a given stakeholder to easily select the statistics they require.
- Secondly, aligning the taxonomy with international best practices allows for a comparison with other metrics for education exports, from the UK and beyond. For example, under the revised taxonomy mode 2 exports are equivalent to "education-related travel exports SDB2", extractable from ONS' Pink Book dataset, Eurostat or other statistical agencies across the globe. Meanwhile, mode 3 exports can be directly compared to outward FATS statistics. Comparing equivalent metrics provides us with a benchmark to identify data gaps and possible avenues for further research.

4.2 Assessing Data

Like subsectors, modes of supply span multiple products. For the measurement of each product, findings from stakeholder interviews are utilised to critically analyse the existing DfE approach against four distinct criteria:

- Accuracy – The extent to which a methodology accurately quantifies intended exports. Approaches that extract international sales data directly from providers and are less contingent on survey-based estimates, or "scaling up", tend to have strong accuracy.
- Coverage – The extent to which a methodology covers all exports within the intended product group. Approaches that cover all or most providers tend to have strong coverage.
- Double counting – The extent to which a methodology may inadvertently capture exports "counted" in another product group.
- Timeliness (and longevity) – The extent to which there is a "lag" in data reporting. On the rare occasions where data availability is diminishing, a methodology's longevity is also highlighted.

Extracting data on educational exports can be extremely complex. For numerous products, or product groups, there may be no satisfactory data source. In these instances, constructive recommendations for future statistical collection are made.

4.3 Onshore consumption of education by international students (mode 2)

4.3.1 Higher education tuition fees

Under the current DfE methodology, fee income data are compiled from the Higher Education Statistics Agency (HESA) financial data record. HESA record the aggregate value of fees at Higher Education Institutions (HEIs) for EU and non-EU domiciled students.

In terms of accuracy, this data is extracted directly from HE providers. HESA itself collects data from HE providers in the devolved administrations. From 2018/19, the OfS (Office for Students) has collected financial data from English HE providers. HESA then collaborate with the OfS to produce a uniform dataset for the entirety of the UK.

In terms of its coverage, HESA's records cover all providers on the OfS' register. According to HESA, this amounts to all UK universities and "more than ninety-nine percent of HE providers" with international students.

In terms of double counting, HESA report a low risk of crossover between fees collected as UK-based education and fees collected as TNE. According to HESA's guidelines, students that spend more than eight weeks of the academic year in the UK are clearly classified as UK-based (HESA, 2021).

In terms of timeliness, HESA adhere to the Code of Practice for Statistics and are legally obligated to work quickly and release data in accordance with professional expectations. HESA publish their finance data each January for the previous year. For instance, some HE fee income data for 2020/21 became available in January 2022.

However, many HE providers do not seem to meet this deadline. Currently (March 2022), comprehensive fee income data is only available for sixty-nine HE providers. For the majority of providers (with financial year end dates from January to July 2021) finance data will be released in June 2022 (HESA, 2021).

Therefore, it would be difficult to produce a robust estimate for HE fee income (and UK education exports) for the year 2020, before June 2022. The current, two-year lag in DfE publications can largely be attributed to this delay.

HE fee income could be temporarily estimated by adjusting the previous year's figure in accordance with changing student numbers and inflation. This "placeholder" approach has been used to estimate 2020 tuition fee income in the revised taxonomy, in Table 5. Figures should be updated once comprehensive financial data becomes available.

Overall, HESA's financial data record represents international best practices in HE statistics collection. Multiple interviewees commented on how fortunate the UK is to have such reliable, accurate and granular figures. This information should certainly be retained in any future dataset.

4.3.2 Higher education living expenditure

Under the current DfE methodology, weekly living costs for EU and non-EU domiciled students are estimated using results from the Student Income and Expenditure Survey (SIES), which was last conducted in 2014/15.

The annual living cost is calculated by multiplying the average weekly cost by the length of stay in the UK, this is assumed to be: 39 weeks for undergraduate EU students, 42 weeks for undergraduate non-EU students, 52 weeks for postgraduate students.

The number of students split by full-time/part-time, EU/non-EU, undergraduate/ postgraduate in each year is taken from HESA's student record. These numbers are then multiplied by the course length (weeks) and by weekly living costs to calculate the aggregate level of living costs for EU and non-EU students. To estimate the figure for the latest academic year, a GDP deflator is applied.

In terms of accuracy, interviewees confirmed that the SIES represents the best data source for HE living expenditure as a consequence of its "national coverage" and "procedural rigor". Estimates for varying "lengths of stay" in the UK by student type were also acknowledged as reasonable.

With that said, interviewees did point out that the latest SIES results had become somewhat outdated, particularly as student spending patterns are likely to have changed during the Pandemic. Moreover, the SIES does not distinguish between domestic and international students. Interviewees commented that this may have led to an underestimation of HE living expenditure exports as international students seem, on average, more affluent than their domestic counterparts.

In terms of coverage and double counting, HESA's student record is robust. Like the financial data record, the student record is aligned with the OfS register and follows the "eight weeks" allocation rule as a criterion for student location.

In terms of timeliness, existing SIES results are readily available. Like the financial data record, HESA's student record is updated each January for the previous academic year. Unlike the financial data record, these statistics seem to be comprehensive in their coverage from January onwards.

Overall, the current methodology for HE living expenditure is sound. It offers a level of disaggregation beyond other approaches, such as ONS Pink Book data. However, an updated SIES that distinguishes between student domicile would certainly offer methodological improvements.

To estimate living expenditure figures for 2020, an exceptional adjustment has been made to account for unprecedented travel restrictions. To capture the number of international students that actually travelled to the UK, Tier 4 visa applications for HE institutions were compared with 2019 figures. Estimates for 2020 living expenditure figures were then updated proportionately.

4.3.3 Higher education Erasmus+

Under the current DfE methodology, statistics on the number of Erasmus+ students coming to the UK are extracted from Eurostat.

Higher Education students who study in the UK under the Erasmus+ scheme do not pay fees to the UK institution but to the partner institution in their country of origin. Therefore, the only contribution included in calculations for Erasmus+ students is living expenditure. It is assumed that all Erasmus+ students are full time, undergraduate students studying for thirty-nine weeks.

In terms of accuracy, living expenditure is contingent on the SEIS, the merits and drawbacks of which have already been discussed.

In terms of coverage and double counting, Eurostat's data is robust. Meanwhile, HESA's student record distinguishes between Erasmus+ students and other international students (HESA, 2016).

In terms of timeliness, Eurostat publishes its country factsheets in December for the previous calendar year. Under the Withdrawal Agreement negotiated with the EU, the UK will continue to participate fully in Erasmus+.

4.3.4 HE providers' other course fees

Numerous interviewees noted that the current DfE methodology does not capture international students undertaking a "foundation year", other further education, or some form of extracurricular training at a HE provider.

Interviewees reported that these courses were very popular with international students who may need additional language and academic training before or during a HE program.

As a solution, HESA collects data on the revenues HE providers raise from "non-credit bearing course fees" and "FE course fees" as part of its financial record. Problematically though, these are not disaggregated by student domicile.

To estimate the contribution of international students, it is assumed that the proportion of international students undertaking "non-credit bearing courses" and "FE courses" is similar to that of international students undertaking HE courses.

Like HE courses, "non-credit bearing courses" and "FE courses" command higher fees for international students. To reflect this disparity, the proportion of HE course fees raised by international students is projected onto total figures for "non-credit bearing course fees" and "FE course fees", to estimate exports.

In terms of accuracy, this approach draws on HESA's financial record which is robust. However, it is also based on broad assumptions that need to be refined.

In terms of coverage, HESA's financial record has already been established as comprehensive.

In terms of double counting, these fees are distinct from HE tuition fees. The risk of crossover with other FE provision and ELT is low. As discussed in subsequent sections, college corporations do not feature on HESA's records. Meanwhile, estimates for ELT exports only pertain to private providers.

In terms of timeliness, information on income from other course fees is returned with information on HE tuition fees. Therefore, there is a considerable lag in the availability of this data. As with before, HE student numbers can be used to provide a preliminary estimate.

Looking forward, there are several opportunities for improvement on HE providers' other course fees. First, the OfS and HESA may consider collecting fee information by student domicile.

Second, more needs to be done to understand the proportion of students (international or otherwise) enrolled on these courses that are not simultaneously undertaking a HE qualification.

With this information, an accurate estimate for the living expenditure associated with these students could be calculated without the risk of double counting exports.

4.3.5 Further education tuition fees and living expenditure

Under the current DfE methodology, the number of international students in FE is estimated using Home Office student visa application data. Volume figures are revised downwards to reflect the number of applications granted (around ninety-seven percent). Prior to January 2021, student visa applications were only submitted by non-EU applicants. Therefore, data does not include the number of EU students studying at FE providers.

The average value of FE tuition fees is estimated using results from the annual Association of Colleges (AoC) Survey. The AoC represents ninety-five percent of the two hundred and forty-four, DfE-regulated colleges incorporated under the Further and Higher Education Act of 1992.

The average weekly living expenditure for FE international students is assumed to be the same as HE students. The average course duration is assumed to be 36 weeks.

In terms of accuracy, using student visa application data as a proxy for FE student numbers seems problematic. According to the AoC survey, just thirty-six percent of international students at FE colleges were studying on student visas in 2018/19. It is likely that this proportion will increase as many EU students are required to register for a student visa post-Brexit. However, a significant number of international students may continue to study on non-student visas. For instance, some international students (from Brazil, Japan and elsewhere) are “non-visa nationals” and would be able to undertake a short course lasting fewer than six months without a student visa (AoC, 2020).

Elsewhere, the results of the AoC survey may not accurately represent its membership. By its own admission, the AoC is a trade association that conducts a voluntary survey in the absence of national statistics. Survey response rates were around twenty percent for 2018/19 (AoC, 2020).

Finally, assumptions made in the calculation of FE living expenditure seem baseless but represent a best alternative in the absence of data.

In terms of coverage, interviewees commented that the current metric overlooks a large number of “unregulated” FE providers. Interviewees distinguished between the DfE-regulated college corporations that form the AoC’s membership and “unregulated FE”, or “any other profitmaking or sometimes charitable organisation that runs courses for adults at levels below HE”. Examples range from government-funded training providers, such as training apprentices, to other providers operating entirely in the private sphere.

Interviewees estimated that “there are definitely hundreds, possibly thousands of organisations in this space”. Although, it is anticipated that the number of international students enrolled in unregulated FE will fall as many EU students

become obligated to apply for student visas. Interviewees also noted that accurately measuring “regulated FE” should be a first priority.

In terms of double counting, the current approach is relatively strong as DfE-regulated colleges are distinct from other providers. However, there may be some overlap with FE FATS exports, as outlined below.

In terms of timeliness, Home Office student visa application data is available for the previous quarter. The AoC’s survey results are typically available in January or February for the previous calendar year.

As a preferable alternative to the current methodology for FE tuition fees, the ESFA publishes annual college accounts data for the majority of “regulated” FE providers. The publication includes income from “International students non-UK/EU”. Directly extracting financial data from the majority of FE providers represents a methodological improvement on the AoC survey.

ESFA college account data is typically published around one year after the previous academic year. For instance, the 2019/20 publication was collated and released in May 2021.

There are some drawbacks to this approach. Firstly, ESFA college account data only pertains to English colleges due to divergent regulation with the devolved administrations. As a practical solution, DfE have proposed that Home Office student visa data could be mapped to estimate the proportion of international students studying at devolved administration colleges. From 2021, Home Office visa data also pertains to “confirmed sponsorships” rather than application numbers (Home Office, 2019).

Secondly, the ESFA publication does not include income from EU students. it is assumed that all ESFA publications after 2021 will collect financial data on income from EU students. If not, Home Office student visa application data could be used to provide an estimate for EU student fees.

Moving forward, interviewees expressed a preference for enhanced data collection by the ESFA. They claimed this could be “relatively straightforward”, if coupled with annual financial reports. Specifically, average course duration and international student numbers could be recorded to enhance estimates for FE exports.

4.3.6 ELT tuition fees and living expenditure

Under the current DfE methodology, estimates for the value of ELT are obtained from the Study Travel Magazine’s annual “Global Market Report”. The Report estimates UK market revenue (tuition fees and living expenditure) which is converted from USD to GBP using the survey’s quoted exchange rate. To avoid the double counting of public providers (universities, FE colleges etc.), this figure is reduced in accordance the proportion of public ELT providers as identified by English UK. It is assumed that only international students undertake ELT.

Study Travel Magazine were uncontactable for the purpose of this report. Moreover, their Global Market Report is not accompanied by a satisfactory explanatory document. It is implied that estimates are roughly based on figures published by English UK. This was confirmed by anecdotal evidence from interviewees.

Given this lack of transparency, an alternative methodology is proposed. As part of their Annual Statistics Report, English UK publish the number of student weeks supplied by their membership centres (English UK, 2021).

The revenue associated with each student, or student week, is not yet collected on an annual basis by English UK. Interviewees reported that eighty-five percent of ELT students organise their trips via an agency and fees can fluctuate for each student. Therefore, many providers are cautious about publicising their fees.

With that said, English UK have been able to produce ad hoc reports on the economic value of ELT by gathering data from students, in conjunction with other organisations. The last of these reports was published by Visit Britain, who paid for a series of ELT-related questions to be added to the IPS in 2018 (Visit Britain, 2020). They found that the average ELT student reported a spend of £1532 over 19 days. This equates to an average spend of £564 for each student week.

This figure can be adjusted for inflation and multiplied by the number of student weeks supplied by English UK's private sector membership to provide an overall estimate for ELT Tuition Fee and Living Expenditure Income.

In terms of accuracy, this approach certainly has its flaws. It benefits from the procedural rigor of the IPS but is ultimately contingent on students accurately recalling their expenditure. The data is also somewhat outdated and spending patterns will have undoubtedly changed with the onset of the Pandemic.

In terms of coverage, this approach likely captures the majority of a fragmented market. Unlike other sectors, there is no single public accreditation scheme for ELT providers. Rather, six independent schemes are approved by the Home Office for the issue of Tier 4 visas.

British Council accredited ELT centres are represented by English UK. This is reported as the largest accreditation scheme by some distance, covering more than four times as many centres as the next largest scheme.

Beyond accredited ELT, the UK market previously played host to a large number of unaccredited providers. However, these "pop-up centres" have diminished as many EU students become obligated to apply for student visas. As a broad approximation, it is reported that English UK's membership now covers around three-quarters of the ELT market. The vast majority of these centres participate in English UK's annual student statistics report.

In terms of double counting, there is no risk of overlap provided English UK's public membership subtracted. The number of public and private centres and their respective "student weeks" is included in English UK's annual student statistics report.

In terms of timeliness, data for English UK's annual student statistics report is collected in January for that academic year. Results are released each April. Ad hoc reports detailing revenue per student week are readily available.

As a more robust, long-term solution, interviewees expressed their desire for a series of ELT-related questions to be added to the IPS permanently. This addition would provide updated figures for revenue per ELT student week. It would also provide an alternative figure for the number of ELT student weeks which could be benchmarked against English UK's annual report.

4.3.7 Independent schools tuition fees and living expenditure

Under the current DfE methodology, the proportion of international students at independent schools is estimated based on results from the Independent Schools Council (ISC) Annual Census. This proportion is then scaled up to represent the entire independent sector using DfE data on independent schools.

Based on ISC data, ninety-two percent of international students are identified as boarders. Using this figure, it is possible to estimate the course fees and living expenditure of international students studying at independent schools. No estimate for the value of living expenditure for day pupils is produced as there is no appropriate data source for this information.

In terms of accuracy, the existing approach is strong. Interviewees agreed that the ISC is representative of the independent school sector, accounting for approximately fifty percent of independent schools and more than eighty percent of independent school pupils. Moreover, its Annual Census is mandatory with reported completion rates of one hundred percent. The disaggregation of international boarders and non-boarders is nuanced, while interviewees confirmed that there was no appropriate data source for the living expenditure of non-boarders.

In terms of coverage, DfE data on independent schools is comprehensive. In terms of double counting, independent schools are wholly distinct from other providers.

In terms of time frames, data for the ISC Annual Census is collected on the 20th of January for each academic year, census results are then published in May for that academic year. Similarly, DfE data on independent schools is collected each January. Results are then published in June for that academic year.

4.4 Trade in goods

4.4.1 Education related equipment (goods and services, modes 1 and 4)

Under the current DfE methodology, data on education related equipment exports are collected through a survey by the British Educational Suppliers Association (BESA).

According to the DfE's methodological note, education related equipment "includes either physical products or software supplied to customers in the education sector" (DfE, 2021). To clarify, BESA's membership covers a range of goods *and* services beyond classroom resources. These include but are by no means limited to consultancy, recruitment, continuing professional development (CPD), educational administration, educational management, a significant proportion of "Edtech" sales, curriculum content and assessment.

In terms of accuracy, the BESA survey is hampered by an array of reporting issues. First, some members are reluctant to reveal details of their accounts. For instance, they may be venture capital-backed and only willing to share export figures as a percentage of their sales, which are often ambiguous.

Even when fully transparent, many firms conduct operations across multiple activities and extracting the exports associated with education can be difficult. For instance, reporting firms may sell multipurpose products, such as paper, to unidentified customers, such as international wholesalers.

Elsewhere, some reporting firms struggle with the subjectivity of "education". For instance, CPD software could be counted under the purview of education or the specific industry for which that software is designed.

Lastly, it can be difficult to *locate* the delivery of educational goods and services. For instance, some reporting firms may not regard products sold to UK overseas campuses as exports, but as domestic sales instead.

In terms of coverage, BESA's membership is thought to represent around forty percent of the educational suppliers' market. BESA's survey of export activity is entirely voluntary with completion rates of around thirty-five percent.

Survey responses are extrapolated by BESA to estimate all UK exports and produce the figure which is used by DfE. The process behind this extrapolation is somewhat arbitrary. It is contingent on a rough estimate of BESA members' export market share from 2010, which has since been adjusted to reflect the annual performance of BESA members relative to other firms.

With that being said, interviewees were confident that BESA's export figures had largely accounted for the recent proliferation of "Edtech" equipment. A best estimate of industry exports supports this narrative. At least a third of "education related equipment" exports are thought to be hardware and software (around £170 million in 2020).

These figures are broadly in line with Dealroom research published in conjunction with the UK Digital Economy Commission. Dealroom value UK "Edtech" suppliers at approximately £3.4 billion (Dealroom, 2020), with valuation multiples of around three times annual revenue. Assuming UK "Edtech" revenue of approximately £1 billion each year and an export ratio of between ten and twenty percent, BESA's current estimate for "Edtech" equipment exports is certainly reasonable.

In terms of double counting, BESA's membership is comprised of firms whose sales are counted elsewhere under the current DfE approach. For instance, the exports of publishing firms, such as Cambridge University Press, are counted as "education related equipment" and "education related publishing".

In terms of timeliness, BESA's survey is completed each April as part of membership renewal. Results are then collated and published in May for the previous calendar year.

Given some of the issues outlined above, TPH conducted a preliminary investigation into the availability of firm level data. BESA are unable to share firm level survey results as a consequence of pre-existing confidentiality agreements. Elsewhere, public accounts are obscured by non-educational operations and multipurpose goods and services, as well geographical uncertainty. In the context of transient multinationals, educational products may be created and collated in one country but are frequently marketed and sold from another to minimise tax exposure.

Considering these complexities and the opacity of firm accounts, it makes most sense to work alongside BESA on the quantification of education related equipment exports. As a first step, BESA have been able to subtract the relevant publishing exports from their figures to mitigate against double counting in the updated taxonomy, outlined in Table 5.

Regardless of these adjustments, overlaps may persist as a consequence of the vast coverage of "educational related equipment". For example, there is likely to be some crossover with educational related equipment and "qualifications, examinations and assessments".

Future survey iterations offer several opportunities for consideration. First, given the expanse of "equipment" covered, the disaggregation of exports could offer useful insights, allow for reclassification where necessary and ward against the possibility of further double counting.

In view of the updated taxonomy, distinguishing between goods and services modes of supply makes sense. To reiterate, disaggregation could also facilitate comparisons with other metrics for greater reliability. For instance, the separation of goods (from services) would allow for some comparison with ONS data on UK trade in goods by industry.

The method for extrapolating survey results also needs to be considered. BESA members' export market share is currently benchmarked against an arbitrary estimate from 2010. Working with BESA to update and refine this estimate should be a priority.

4.4.2 Education related publishing (goods)

Under the current DfE methodology, data on education related publishing is sourced from the Publishers Association's annual yearbook. In conjunction with Nielsen, the Publishers Association (PA) collects statistics on the export of educational books, both physical and digital, by members and non-members as part of its *Publishers Association Sales Monitor*. This data is then scaled up to produce an estimate for the whole sector.

In terms of accuracy, numerous interviewees reported the current approach as being robust in the context of a complex market. Survey respondents are provided with clear instructions on what constitutes "educational" and what constitutes an "export". "Educational" products pertain to content for "schools, ELT and academia". "Exports" are defined in accordance with cross border sales for print sales, and the location of intellectual property and the end user for digital sales.

Despite these instructions, interviewees recounted a strong possibility of reporter error, particularly in the digital space. As an example, larger publishing firms may struggle to delineate and assign the location of the IP associated with their subscriber platforms.

In terms of coverage, the *Publishers Association Sales Monitor* is relatively comprehensive. Twenty companies, representing over two hundred publishers supplied data in 2020 (Publishers Association, 2021). Following an extensive, data-driven benchmarking exercise from 2005 and periodic reassessments based on industry wide surveys, it is estimated that the *Publishers Association Sales Monitor* covers seventy percent of printed book sales and fifty-five percent of digital book sales by UK publishers. In view of these estimates, the Publishers Association extrapolates survey results to estimate the whole UK market.

In terms of double counting, the *Publishers Association Sales Monitor* collects data on digital and physical books supplied by publishers only. As publishing sales recorded by BESA have now been accounted for, the risk of crossover is regarded as low.

In terms of timeliness, the Publishers Association Yearbook is released each September for the previous calendar year.

4.5 Services delivered cross-border (mode 1) or temporary provision by a UK resident overseas (mode 4)

4.5.1 Subscriptions to academic journals

Under the current DfE methodology, subscriptions to academic journals seem to be overlooked. As these exports are sold as a subscription *service*, they have been separated from education related publishing "goods" as outlined above.

Like education related publishing goods, data on the export of subscriptions to academic journals is extracted from the Publishers Associations annual yearbook. The merits of this data source have already been discussed.

4.5.2 Qualifications, examinations and assessments

For 2019 figures, there is no apparent methodology for qualification awarding bodies' exports. DfE reported that these figures are based on estimates from the annual accounts of AQA, Cambridge Assessment, City and Guild and Pearson (previously Edexcel). It is assumed that these enterprises cover most exports.

As a refinement, Ofqual have published data on the number of Ofqual-regulated qualifications awarded overseas by provider from 2019/20.

Of the providers that sold more than twenty thousand Ofqual-regulated qualifications outside of the UK in 2019/20, only the International Baccalaureate Organisation (IBO) is headquartered overseas. Although the IBO has a limited UK company, its sole shareholder is a non-for-profit organization registered in Switzerland. Hence, the IBO's overseas sales cannot be regarded as UK exports.

A summary of the remaining providers and the number of Ofqual-regulated qualifications they awarded overseas is displayed below, in Table 3.

Table 3: Ofqual-regulated qualifications awarded overseas by UK-headquartered providers (2019/20)

Provider	No. of overseas qualifications	Percentage of total (%)
Cambridge Assessment	2,674,620	70
Pearson Education Ltd.	435,935	11
Trinity College London	137,635	4
Associated Board of the Royal Schools of Music	101,660	4
Other	465,925	12

Source: (Ofqual, 2021)

Problematically, Ofqual does not collect data on the revenues raised from the export of these qualifications. Therefore, revenues must be extracted from company accounts.

For Cambridge Assessment, this process is straightforward. Prior to 2021, Cambridge Assessment existed as a company in its own right and was focused almost entirely on qualifications, examinations and assessments. Cambridge

Assessment's annual review reports its international sales as a proportion of total sales (Cambridge Assessment, 2021).

For other providers, identifying qualifications exports is much more complicated. Taking Pearson's accounts as an example - qualifications, examinations and assessments are indistinguishable from other revenue streams, such as publishing, tutoring or recruitment.

For 2019 and 2020 export figures, Cambridge Assessment's revenues can be extrapolated to estimate the revenues raised by all Ofqual-regulated qualifications awarded by UK-headquartered providers overseas.

In terms of accuracy, this approach does have some significant drawbacks. First, it assumes that all of Cambridge Assessment's overseas sales relate to Ofqual-regulated qualifications. Second, it does not account for variation in the revenues raised by qualifications beyond Cambridge Assessment.

In terms of coverage, all Ofqual-regulated qualifications are estimated. However, non-Ofqual regulated qualifications may also be exported by British-headquartered firms. This is an interesting avenue for further research but should not be a priority in view of the relative contribution of qualifications exports.

In terms of double counting, there is some risk of overlap with education-related equipment, as outlined above. Double counting could become more problematic if qualifications sales have to be estimated as a proportion of the accounts of educational conglomerates. Such estimates should therefore be avoided if possible.

In terms of timeliness, Ofqual releases its "annual qualifications market report" each February for the previous academic year. Cambridge Assessment's Annual Reports are published in November for the previous academic year.

In terms of longevity, this approach is untenable. Cambridge Assessment English has merged with Cambridge University Press making it difficult to extract qualifications revenue from company accounts. As a solution, Ofqual may consider collecting sales statistics as part of its annual qualifications market report.

4.5.3 Asynchronous online learning by education providers

Asynchronous online learning refers to B2C provision that is exclusively online. It should not be confused with the kinds of mixed provision that have become ubiquitous over the past two decades.

At present, the best available data on B2C cross-border education can be derived from "traditional" providers.

As part of their Aggregate Offshore Record (AOR), HESA collect data on the number of international students undertaking distance, flexible or distributed learning for a UK HEP award where the location of the student is known to be overseas. HESA

also publish data on TNE fee income, facilitating an estimate for the exports associated with these students.

For a full explanation on how these statistics are separated from the rest of the AOR, as well as an analysis on the accuracy of this methodology, the risks of double counting and reporting timeframes, please see the “Mode 3” section below.

In terms of coverage, this approach is poor as it captures the minority of a bourgeoning sub sector in the absence of reliable data. With that said, there is some evidence that other “traditional providers” are beginning to collect statistics on the extent of virtual provision. As a consequence of the ongoing pandemic, the ISC, the AoC and English UK have started to record and publish data that documents exclusively online learning.

At present, this data is not comprehensive enough to allow for an estimate of the revenue associated with B2C cross-border education. However, multiple interviewees commented that statistical collection is improving as the prevalence of digital provision becomes a permanent legacy of the pandemic.

Beyond these associations, this approach also fails to capture the role “non-traditional” providers. In essence, these are Edtech firms that deliver educational content directly to consumers without using established institutions (schools, colleges, universities etc.) as an intermediary. Examples include language learning apps, certain MOOCs and even online video sharing platforms, provided by B2B technology providers to education providers.

Quantifying the contributions of B2B or edtech providers is extremely complex and beyond the scope of company accounts. As an example, *Busuu,* a prominent UK-headquartered language learning platform, reported sales of around twenty-one million pounds for 2020 (Companies House, 2021). However, the proportion of these revenues generated overseas cannot be identified. Meanwhile, the amalgamation of B2B sales with B2C raises the possibility of double counting.

Numerous interviewees acknowledged the difficulties of measuring asynchronous online learning supplied by non-traditional providers. Looking forward, there are two avenues for further research. First, BESA survey results could offer some indication as to the prevalence of international B2C by non-traditional providers, particularly if education related equipment is thoughtfully disaggregated.

4.5.4 Peer-to-peer learning on platforms

LSE has sought to estimate the revenues associated with the international consumption of UK-produced, educational content posted on platform-based services where content creators are SMEs or individuals who monetise their content through advertising.

While there are “traditional providers” on these platforms, their content is rarely monetised. Instead, there are individual creators with millions of subscribers, such as

"English with Lucy". Revenues or exports are generated by monetised views, i.e., advertisements that are not identified as education exports under any official statistics.

YouTube is by far the largest platform for this export revenues, as other video streaming services or podcasts are far less widespread, monetised, or measurable. Yet, even the data on YouTube's educational content is relatively sparse: YouTube reported five hundred million daily views of learning related content in 2017 (Google, 2018). Whilst total daily viewing figures were unavailable for 2017, viewers watched more than one billion hours of content each day (Nicas, 2017). At an average video length of 11.7 minutes, this equates to around five billion daily views, with learning related content accounting for around ten percent.

In terms of UK output, YouTube's total economic contribution (including induced sales, indirect effects etc.) to the UK economy is estimated at £1.3 billion for 2019, of which, £520 million is thought to be direct advertising revenues generated by the platform. This would suggest that around £52 million pounds of revenue is generated by UK-produced, educational content posted on YouTube.

More than eighty percent of the content uploaded by UK creators and companies is viewed outside of the UK, leading to an estimated export figure of approximately £41 million for 2019 (Ofcom, 2020). In the context of the pandemic, YouTube's global revenue increased by more than thirty percent in 2020, leading to a very conservative estimation of the export figure of around £53 million.

Clearly, this approach is contingent on a number of arbitrary assumptions and is best regarded as a first step. However, novel revenue streams will only become more prevalent with the proliferation of accessible, digital education. Looking forward, YouTube have indicated a willingness to engage in enhanced data collection for UK education exports.

4.5.5 HE research and other contracts

Under the current DfE methodology, the value of research grants and contracts provided by international sources is captured in data HE institutions return to HESA. This incorporates export income from academic departments' research grants and contracts, academic services and administrative and central services.

The accuracy and coverage of HESA's statistical collection has already been discussed, as well as the risks of any double counting. These statistics are the product of international best practices.

In terms of timeliness, information on income from HE research, and other contracts is returned concurrently with information on tuition fee income. Therefore, there is a considerable lag in the availability of this data.

4.5.6 IPRs

IPRs play a fundamental role in profit-shifting or remitting profits out of a target market. This is particularly common for franchising and other business models where trademarks are licensed to a third country. Thus, a UK service provider may not actually establish a commercial presence but license its brand to a local partner. IPR-based revenues also enjoy preferential tax treatment in certain jurisdictions.

Alternatively, such licensing fees are collected as management fees (and then recorded as a consultancy service). In the case of minority shareholding and portfolio investments by the UK education industry, profits from overseas activities may be remitted as dividends. Moreover, there are IPR classes other than trademarks – notably publication copyright licenses – whose revenue streams are already recorded under publishing.

Under the current DfE methodology, there is only one instance of IPR revenues recorded. Information on the total value of HE Intellectual Property Rights (IPRs) revenue comes from the Higher Education Business and Community Interaction Survey (HE-BCI). This provides data on the total (domestic and international) income from IPRs for the HE sector only.

To estimate the proportion of HE income from IP that is exported, the estimate from London Economics Research is used by DfE. London Economics took data on export revenue for the R&D sector in 2008. They found that thirty-eight percent of R&D sector revenue was generated through exports. It is therefore assumed that this same proportion can be applied to the education sector.

In terms of accuracy, the HE-BCI is a good barometer for total HE IP income, with data extracted directly from all, OFS-registered HE institutions. Use of the London Economics estimate is more problematic, given temporal and sectoral variation in the extent to which R&D has internationalised. Also, many IPR fees in education relate to branding, which is only vaguely related (if at all) to R&D sector activities that focused on technical product development.

As an alternative, the HE-BCI collects data on the total number of HE non-software, income-generating licenses overseas. One can calculate the number of non-software, income-generating overseas licenses as a proportion of the total number of HE non-software income generating licenses, before projecting that proportion onto the total value of HE IPR income to produce an estimate for HE IPR exports.

This proxy is far from infallible as cross-border IPR licensing is common. However, it does reflect the extent to which HE IPR has internationalised in a given year.

With that said, there is still a significant risk of double counting. IPR assets, like copyright, are likely already recorded under digital publishing revenues.

In terms of time frames, HE-BCI data is currently available for the 2019/20 academic year. This would suggest a reporting lag of at least eighteen months. Since the last

release, the HE-BCI has become voluntary for OFS-registered HE institutions so response rates may drop in the future.

In sum, IPR revenues from HE are less than £50 million. This data point is associated with uncertainty and gaps, with no equivalent data available for other subsectors.

For instance, if we assume that repatriated revenues are proportionate to general turnover overseas (FATS), total education sector IPR revenue from overseas could be extrapolated to approximately £220 million. Moreover, these figures are not in the same parity as digital publishing fees and subscription services, which run into the billions.

Despite these issues, data HE IPRs is included for the time being as it is too small to affect the total figure.

4.6 Education via a UK commercial presence in an overseas territory (mode 3)

To clarify, a “commercial presence” typically refers to a locally established affiliate, subsidiary, or representative office of a UK-owned and controlled company.

4.6.1 Higher education FATS

Under the current DfE methodology, the number of HE TNE students enrolled at UK institutions overseas can be identified from HESA’s Aggregate Offshore Record (AOR). The average per student revenue for HE TNE students is derived from Department for Business, Innovation and Skills (BIS) research conducted in 2012/13. Although not explicit, it is assumed that per student revenue figures are adjusted for inflation before being multiplied by the total number of HE TNE students.

The DfE approach utilises HESA’s AOR which collects TNE student numbers each year from all OfS-regulated HE providers. However, statistics on per student revenue appear outdated, particularly considering rapid development in the HE TNE market over the last decade. Interviewees also commented that the current methodology amounts to a ‘headcount’ approach, which ultimately fails to capture diversity in HE TNE business models and their associated revenue streams.

With these issues in mind, an alternative methodology is proposed. HESA’s AOR offers a breakdown of student numbers by five types of activity. These are outlined below, in Table 4. The AOR also offers a breakdown of student numbers by country of activity.

Elsewhere, under HESA’s financial record, Welsh, Scottish and Northern Irish HE institutions provide data on TNE course fees from EU and Non-EU countries for 2019/20 (earlier releases appear less comprehensive).

Data on TNE course fees from English HE institutions are unavailable. This is because financial data from English HE providers is collected in accordance with OfS specifications as opposed to those of HESA.

Using student numbers as a proxy, HE TNE course fees can be estimated by activity type for thirty-one providers from the devolved administrations. These figures can then be scaled up to represent all students recorded in the AOR. Results are depicted below, in Table 4.

Table 4: Estimated HE TNE course fees by AOR activity type

AOR activity type	Tuition paid to UK provider	Main mode of supply	No. of students 2019/20	Estimated course fees 2019/20 (£000s)
1. Registered at reporting provider - studying overseas for UK HEP award at overseas campus of reporting provider	Yes	3	30960	78546
2. Registered at reporting provider - studying overseas for UK HEP award other than at an overseas campus of reporting provider	Yes	3	127345	323074
3. Registered at reporting provider - distance, flexible and distributed learning for UK HEP award where the location of the student is known to be overseas	Yes	1	174470	442630
4. Registered at overseas partner organisation - studying overseas for an award of the reporting provider	No (although some income repatriated to the UK in the form of franchising agreements,	Possibly mode 3 (this depends on whether the overseas partner organisation is a UK-controlled	95260	Unknown

AOR activity type	Tuition paid to UK provider	Main mode of supply	No. of students 2019/20	Estimated course fees 2019/20 (£000s)
	IP remittances etc.)	"foreign affiliate")		
5. Any other student studying overseas for an award of the reporting provider (e.g., Multiple UK or international partners delivering a combination of other types of provision)	No (although some income repatriated to the UK in the form of franchising agreements, IP remittances etc.)	Possibly mode 3 (this depends on whether the overseas partner organisation is a UK-controlled "foreign affiliate")	4460	Unknown

Source: HESA AOR and authors' calculations

In terms of accuracy, this approach is best regarded as a first step. Multiple interviewees noted that the AOR is complicated by reporting issues. In particular, "activity" categories are reflective of "outdated business models" and likely result in some students being misclassified.

Looking forward, industry stakeholders, such as UUKI and HESA, have started consultations on reforming the AOR to reflect contemporary business models. TPH have made an active contribution to these discussions and reiterate our support for "activity" categories that align with WTO modes of supply and distinguish between foreign affiliates (overseas enterprises under the control of an institutional unit resident in the UK) and other partnership agreements.

It should also be acknowledged that student numbers are an imperfect proxy for the distribution of course fees. Interviewees noted significant variation in the revenue produced by different types of partnerships. Ideally, HESA would produce data on per student revenue by activity type. However, collecting granular financial statistics from overseas enterprises is not without its complications.

Similarly, HE providers from Wales, Scotland and Northern Ireland are not necessarily representative of UK HE providers as a whole. To strengthen these figures, the OfS may consider collecting data on HE TNE course fees from English providers.

In terms of coverage, this approach only accounts for TNE student revenue that is paid to and reported by UK HEI's. It is possible that some of the students

categorised under activities 4 and 5 are attending overseas partner organisations under UK control. In this instance, their fees should also be regarded as a mode 3 export. Reforms to the AOR could facilitate an accurate estimate for these figures.

In terms of double counting, HESA report a low risk of crossover between fees collected as UK-based education and fees collected as TNE. According to HESA's guidelines, students that spend more than eight weeks of the academic year in the UK are clearly classified as UK-based (HESA, 2021).

In terms of timeliness, HESA's AOR is published in November for the previous academic year. For instance, AOR statistics for the 2020/21 academic year were available in November 2021. Information on HE TNE course fees is returned concurrently with information on tuition fee income. Therefore, there is a considerable lag in the availability of this data.

4.6.2 Further education FATS

Under the current DfE methodology, an estimate for FE colleges' TNE income is derived from a London Economics Survey of Tier 4 sponsors conducted in 2011. This estimate was based on a small number of responses and scaled up to represent the sector, before being adjusted for inflation.

There are a number of problems with this approach. In short, it appears outdated and is based upon a relatively limited sample of self-selecting respondents.

As an alternative, the Association of Colleges have identified DfE-regulated college corporations with significant ownership of three consortia operating FE campuses overseas (BIS, 2014). These college corporations are Lincoln College, Activate Learning and Burton and South Derbyshire College. The revenues associated with Lincoln College and Activate Learning have been extracted or estimated from their annual accounts. This information was not discernible for South Derbyshire College.

In terms of accuracy, this approach can be regarded as acceptable. Where possible, overseas sales of service are extracted directly from college corporations' accounts and are clearly distinct from other revenue streams. In other instances, estimates are made based on past performance and inflation.

In terms of coverage, this approach is comprehensive with regards to DfE-regulated college corporations. However, it does no cover FE colleges in the devolved administrations or "unregulated" FE providers.

In terms of double counting, DfE-regulated colleges are distinct from other providers. With that said, there may be some crossover between international students' FE tuition fees and FE FATS depending on the interpretation of ESFA college accounts data fields. More specifically, if "International students non UK/EU" revenue is construed to include overseas operations, the figures reported by Lincoln College and Activate Learning may be counted twice in the revised taxonomy. These numbers are relatively small in the context of UK education exports, however future

iterations of ESFA data could distinguish between domestic and international revenue streams.

In terms of timeliness, college corporations' annual accounts are released in July, at the end of each academic year.

Looking forward, the ESFA may consider explicitly including "income from overseas operations" as part of their financial reports.

4.6.3 ELT FATS

Under the current DfE methodology, figures for ELT TNE are based on accounts published by the British Council and Pearson, who report on the income generated from any activity that "develops a wider knowledge of the English Language".

This approach is methodologically flawed to the extent that these figures should not be used in an estimate for education exports.

With that said, finding an alternative is extremely difficult. Interviewees acknowledged that certain UK-based providers conduct overseas teaching across modes 3 (affiliate centres) and 4 (fly in tutoring etc.). Interviewees also speculated that overseas ELT provision has increased as the Pandemic has disrupted mode 2 exports.

However, no industry association or body collects data on the extent of these operations. Looking forward, DfE and DIT may consider collaborating with the likes of English UK to ensure that UK based providers' overseas operations are surveyed.

4.6.4 Schools FATS

Under the current DfE methodology, schools FATS are based on research conducted by the International Schools Consultancy for 2015 export figures. The International Schools Consultancy produced an estimate for the revenue of schools who deliver "some part of the (UK) curriculum to students outside an English-speaking country" (DfE, 2021). This figure is then converted to sterling and adjusted for inflation. An arbitrary ten per cent of the revenue from these activities is estimated to be repatriated to the UK.

There are numerous issues with this approach. Many schools deliver some part of the UK curriculum beyond the control of an institutional unit resident in the UK. Conversely, many schools' foreign affiliates are known to operate within English-speaking countries. As a consequence, this figure is currently being reviewed by DfE.

As an alternative, TPH have estimated the sales of service associated with the foreign affiliates of UK independent schools. According to the latest Independent Schools Council Census, UK independent schools operate eighty-one campuses overseas with around fifty-three thousand students. The tuition fees associated with these campuses has been estimated by the International Schools Consultancy.

In terms of accuracy, this approach is relatively robust. The number of pupils studying at independent schools' overseas campuses is extracted directly from the parent schools via a mandatory census. Elsewhere, the International Schools Consultancy is a reputable market research firm with an established knowledge of tuition fee structures.

In terms of coverage, UK foreign affiliates likely extend well beyond independent schools. Certain British-headquartered, international schools groups are associated with hundreds of sites worldwide. Determining whether these sites constitute "foreign affiliates" is decidedly more complex and generally beyond the scope of their public accounts.

For instance, Nord Anglia Education is a London-headquartered group advertising seventy-eight schools on four continents. However, UK company, Nord Anglia Education Limited, reports no overseas subsidiaries. Meanwhile, its only overseas income relates to "management fees" that are not necessarily implicit of organisational control. With that in mind, it is impossible to attribute organisational control and quantify international sales of service based on UK public accounts.

Given the possible size of this sub sector, international schools groups warrant further research. Consultations with the International Schools Consultancy represent a sensible first step. However, from the perspective of international trade, it is important that FATS continue to be distinguished from other partnership agreements.

In terms of double counting, the Independent Schools Council census explicitly distinguishes between pupils registered at UK independent schools and pupils registered at their overseas campuses.

In terms of timeliness, the Independent Schools Council Census is published each May for that academic year. The International Schools Consultancy monitors tuition fee revenue on a rolling basis.

4.6.5 Early years FATS

Under the current DfE methodology, Early Years provision is overlooked. Interviewees from the Early Years sector reported virtually no Mode 2 exports as a natural consequence of the students involved in this sector.

Generally, interviewees described the UK Early Years market as being "highly fragmented" and predominantly comprised of smaller providers with "one or two" domestic locations. As an exception, Busy Bees Nurseries and Bright Horizons were identified as having significant overseas operations.

Busy Bees is the UK market leader with around three-hundred and fifty domestic locations. Busy Bees also maintains a significant international presence with more than four hundred nurseries across Europe, North America, Asia and Oceania. These overseas enterprises are under the control of a UK-headquartered company and can therefore be regarded as foreign affiliates. Busy Bees' international

revenues have been extracted from Companies House under Eagle Midco Limited (Companies House, 2022).

Bright Horizons is the UK market second with more than three hundred domestic locations. Whilst it does have an overseas presence, Bright Horizons operates as part of an international network that is headquartered in the US. Therefore, these overseas enterprises cannot be considered UK foreign affiliates.

In terms of accuracy, international revenues are a robust reflection of Busy Bees' overseas sales of service.

In terms of coverage, industry stakeholders were unaware of other UK-based groups with a significant international footprint.

In terms of double counting, Busy Bees are exclusively focused on the provision of Early Years. Therefore, there is a no risk of crossover with other subsectors.

In terms of timeliness, Busy Bees' accounts are published each summer for the previous calendar year.

4.7 Other amendments

In addition to the changes outlined above, the revised taxonomy omits several product groups covered by the current DfE methodology and the literature review. An explanation for these omissions follows.

The current DfE methodology includes deductions to HE tuition fee exports as a consequence of scholarships, tuition fee loans and other financing arrangements. As outlined in the literature review, these arrangements are effectively "subsidies" and do not detract from exports.

The DfE methodology also includes an "other overseas income" product group for both HE and FE providers. Estimates for "other overseas income" are based on a small number of survey responses from the London Economics (2011) study. Beyond the shortcomings of this methodology, including an ambiguous "catch all" category seems problematic as it can facilitate double counting and the inclusion of income that does not constitute "trade", such as charitable donations.

The taxonomy depicted in Table 5 includes no estimate for the export of private sector training or professional qualifications. Certain interviewees were sceptical about these two product groups and the extent to which they can be regarded as an education export. Furthermore, these products are stipulated beyond Chapter 85 of the ISIC (2008). Subsequently, their inclusion would compromise figures with respect to international comparisons and "benchmarking" against other metrics for education exports.

Finally, other "omissions" are not omitted at all, but rather transcend product groups. Both educational consulting and SEND apparatus are included in BESA's estimate for education-related equipment. To varying degrees, SEND provision is also

captured in the Mode 2 product groups listed. For example, independent schools provide SEND support to around seventeen percent of their pupils (ISC, 2022). However, data availability prohibits meaningful distinctions.

Similarly, “Edtech” is ubiquitous across the taxonomy. In certain instances, Edtech distinctions are logical. Considering different modes of supply, it is beneficial to distinguish between asynchronous online learning and other forms of TNE. Looking forward, it may be useful to extract “education related software” from education related equipment. However, it would make less sense to separate all tech-facilitated provision from the mode 2 product groups listed. In this vein, we are unlikely to ever produce, or even require, an authoritative estimate for UK “Edtech exports”.

4.8 Revised taxonomy

By implementing the practices outlined in this report, it is possible to formulate a revised taxonomy for UK education exports. This is depicted below, in Table 5.

For each product group, education exports are estimated for 2019 and 2020. For a granular, numerical breakdown on how these figures are produced, please see the accompanying excel document.

Figures for 2020 should be interpreted with caution and are best regarded as an “experimental estimate”. For certain product groups, estimates can be revised with the release of HESA finance data in June 2022. Elsewhere, for living expenditure exports, some adjustments are made to account for the impact of the pandemic. However, these adjustments are best regarded as a rough estimate as visa data collection was impeded by COVID19 (Home Office, 2022).

In addition to export figures, the table includes an index or traffic light system indicating the methodological strength of each estimate across the four, established criteria. A green rating is indicative of best practices with no cause for further revision. A yellow rating is indicative of acceptable practices with some cause for further revision. A red rating is indicative of questionable practices and should be prioritised for further revision.

Table 5: A revised taxonomy for UK education exports

Export	2019 (£000s)	2020* (£000s)	Accuracy	Coverage	Double Counting	Timeliness
Onshore consumption by overseas students (mode 2)	**18,723,032**	**17,030,450**				
HE tuition fees	7,419,697	8,535,715*				
HE living expenditure	8,511,154	6,476,630*				
HE Erasmus+	397,536	405,316*				
HE providers' other course fees	256,297	267,249*				
FE tuition fees	53,937	47,881				
FE living expenditure	163,903	62,646*				
ELT tuition fees and living expenditure	871,095	220,378				
Independent schools tuition fees and living expenditure	1,049,413	1,014,635				
Goods exports	**1,576,158**	**1,328,000**				
Education related equipment	597,918	514,000				
Education related publishing (print)	916,576	674,875				
Education related publishing (digital)	61,663	139,125				
Other modes of cross-border supply and temporary provision by UK residents overseas (mode 1 & 4)	**4,217,706**	**4,290,094**				
Subscriptions to academic journals (print and digital)	1,832,000	1,937,000				
Qualifications, examinations and assessments	412,835	435,357				
Asynchronous online learning	303,431	325,499				

Export	2019 (£000s)	2020* (£000s)	Accuracy	Coverage	Double Counting	Timeliness
Peer-to-peer learning on platforms	41,000	53,000				
HE IPRs	93,834	57,749*				
HE research grants and other contracts	1,534,606	1,481,489*				
UK commercial presence overseas (mode 3)	**1,781,469**	**2,100,130**				
HE FATS	495,435	556,740				
FE FATS	54,718	61,452				
ELT FATS						
Independent schools FATS	992,247	1,261,176				
Early years FATS	239,069	220,761				
Total Exports	**26,298,365**	**24,748,674**				

Note. * Experimental estimate to be revised with the release of additional data. ** Criteria defined in 4.2 “assessing data”.

4.9 Contextualising the results

At the top line, a revised taxonomy for UK education exports yields a similar figure to that produced by DfE (2019). Cross border education exports (excluding mode 3) are estimated as £24.5 billion for 2019. This figure is not dissimilar to the DfE’s observation for “education exports” (not including TNE activity) at £23.0 billion. At this level, education exports eclipse those of food and drink, pharmaceuticals and legal services, as measured by ONS and major industry bodies (ABPI, 2021; FDF, 2021; ONS, 2021; The City UK, 2021). However, some caution should be exercised in interpreting cross-sectoral comparisons due to the divergent methodologies employed.

Trade in all modes of delivery, including mode 3, are estimated to be £26.3 billion in 2019. This is comparable to the DfE estimate for “education exports and TNE activity” at £25.2 billion.

Breaking down to specifics, overseas students (mode 2 exports) amounted to £18.7 billion in 2019, under the revised taxonomy. This was slightly less than the DfE equivalent at £19.0 billion. Whilst the revised taxonomy adds figures for HE

providers' other course fees and omits the deduction of scholarships from tuition fee income, these gains are offset by smaller estimates for FE and ELT provision.

ONS Pink Book data estimates education-related travel exports (direct equivalent to mode 2) to be £14.3 billion in 2019. Considering this benchmark, it seems unlikely that a large number of international students are unaccounted for, in either the DfE publication or the revised taxonomy.

It is also worth noting, that living expenses still account for around one-third of exports' value. In assessing the direct output of the education industry vis-à-vis non-travel sectors, living expenses must be deducted to ensure figures are comparable.

Under the revised taxonomy, education goods exports amounted to £1.6 billion in 2019. This is comparable to the DfE estimate of £1.86 billion. Approximately £0.2 billion worth of exports were removed as certain publishers' exports were double counted as "equipment" and "publishing".

The ONS' UK Trade in Goods dataset recorded education exports as £0.24 billion in 2019. This estimate is contingent on customs data and would not include certain digital products, like eBooks or software. Nonetheless, these figures could provide a useful benchmark if physical products (stationary, furniture and other apparatus) can be distinguished from "education related equipment" moving forward.

Under the revised taxonomy, "outward" cross-border exports (modes 1 and 4) were estimated at £4.2 billion in 2019, significantly more than the DfE estimate of £2.2 billion. This discrepancy can largely be attributed to the addition of "subscriptions to academic journals" and "asynchronous online learning".

Lastly, under the revised taxonomy, education exports provided by UK foreign affiliates were estimated as £1.8 billion. If we assume that the average net income-based profit margin (post-tax) in this sector is around 3.31% (NYU Stern, 2020), at least £55 million would, in theory, be available for repatriation to the UK from overseas.

This is slightly less than the DfE figure for TNE Activity at £2.2 billion. The addition of Early Years statistics was offset by the disaggregation of the AOR and a reduction in the number of HE students counted under the purview of UK foreign affiliates, as well as the removal of ELT FATS.

In comparison, the latest-available figure (2018) provided by Eurostat for UK outward FATS in the education sector was £8.7 billion – nearly four times higher than the estimate in Table 5. This benchmark could be indicative of a significant statistical gap. Reforming the AOR to better distinguish FATS statistics, investigating the prevalence of international schools groups and collecting figures on the contribution of ELT affiliates are possible actions for improved data collection.

4.10 International comparisons

Targeted research projects in other countries are few and far between with regards to education exports. Although, the Australian Government did commission Deloitte Access Economics to estimate "The value of international education to Australia" in 2015 (Deloitte, 2015). Like the revised taxonomy, Deloitte organised education exports by mode of supply. Once more, Mode 2 exports accounted for the majority of education exports.

Unlike the revised taxonomy, Deloitte focused exclusively on the direct provision of education services across modes. Other products included by UK industry data (such as eBooks, furniture and stationery tailored for use within education) were not included. Thus, some caution should be exercised in comparing their final export figure (£9.5 billion for 2015) to the revised taxonomy.

Given the general absence of international best practices, the UK could potentially activate directorates within the OECD (TAD, Education) to develop international datasets building on the work conducted by UK government.

5. Conclusion

The export of education has always occurred as a variety of goods and services. Meanwhile, product diversity has only accelerated with the rise of digitalisation. Established statistical approaches struggle to capture the value of education exports or provide a satisfactory level of granularity across subsectors. A breadth of literature has attempted to fill this information gap and a series of publications by the DfE provide the most comprehensive figures to date for UK exports.

In effect, this project has conducted a critical review of the existing methodology. Market trends, international best practices and the thoughts and opinions of industry stakeholders have been synthesized to offer several updates for consideration.

Firstly, the taxonomy has been reformatted. Where possible, products have been grouped into goods and services modes of supply. As well as distinguishing between cross-border trade and trade more generally, this revision facilitates comparisons with other metrics for education exports. "Benchmarking" estimates against alternative methodologies can increase reliability and help to identify remaining data gaps and other inaccuracies, as well as enabling international comparisons.

Secondly, the DfE's approach to quantifying various product groups has been reviewed against four distinct criteria. In some instances, novel data sources allow for revision or refinement. Updated methodological approaches for measuring products such as *ELT exports*, *FE course fees* and *HE FATS* have improved the accountability of these statistics. Where reliable data is difficult to locate or does not exist, constructive suggestions for statistical collection have been made.

Thirdly, the revised taxonomy has identified new product groups such as *asynchronous online learning, HE providers' other course fees* and *subscriptions to academic journals.* Accounting for these products has prompted a small increase in estimates for UK education exports.

Nonetheless, we see that the bulk of export volumes remain within the confines of the education industry and ISIC Chapter 85, rather than online activities and non-traditional suppliers.

5.1 Areas for further research

Despite these revisions, there are numerous avenues for further research. Recommendations for enhanced statistical collection on education exports are summarised below, in Table 6.

Aside from expanding and refining the taxonomy, more could be done to understand the geographical distribution of UK education exports. For all modes, some estimate could be made for the importance of various export markets. Conversely, for mode 2 education exports, robust figures could be produced on the respective contributions of UK regions.

In addition, there is also research that can be conducted to understand the role that the education sector plays for the general export competitiveness of the UK. For instance, it is well established that the UK education sector is a strategic supplier to UK exporters and multinationals: The sector assists in the training necessary for UK professionals before they deploy abroad, or trains foreign staff working for UK multinationals to acquire the technical or professional skills necessary to work for a UK employer. These services are typically procured within the UK by firm headquarters but are actually supplied to subsidiaries or individuals located outside the UK.

Table 6: Recommendations for enhanced statistical collection

Product group	Recommendation
HE living expenditure, HE Erasmus+	An updated SIES that distinguishes between student domicile would enhance the accuracy of the existing methodology.
HE providers' other course fees	OfS and HESA may consider collecting non-credit bearing and FE course fees by student domicile. It would also be useful to understand the proportion of students (international or otherwise) enrolled on these courses that are not simultaneously undertaking a HE qualification.
FE tuition fees and living expenditure	As part of its annual financial data collection, the ESFA may consider collecting information on international student numbers, international student (EU and Non-EU) fees and average course duration. Some investigation into devolved administrations' FE colleges and 'unregulated' FE (beyond the established college corporations) would also improve coverage.
ELT living expenditure and	A series of ELT-related questions may be added to the IPS permanently to provide updated figures for revenue per ELT student week and an alternative figure for the number of ELT student weeks.
Education related equipment	Future export survey iterations may attempt to disaggregate equipment exports (following HS, EBOPS or other nomenclature). Disaggregation by goods and services modes of supply would facilitate useful comparisons with other metrics. Elsewhere, the method for extrapolating BESA members' export market share could be updated and refined through a benchmarking exercise.
Qualifications, examinations and assessments	Ofqual may consider collecting sales statistics as part of its annual qualifications market report.
Asynchronous online learning and platform learning	Given the rise of online learning, encouraging "traditional providers" and their industry bodies (e.g., English UK) to collect data on digital enrolment and course fees will be increasingly important. Information on "non-traditional providers" and their exports may be captured through the disaggregation of "education related equipment" or by surveying firms directly, particularly in highly concentrated markets. For instance, precise, annual estimates of overseas advertising revenues generated by (and paid to)

Product group	Recommendation
	UK creators of educational and learning content could be generated.
HE FATS	Reforming the AOR's "activity" categories to align with WTO modes of supply and distinguish between foreign affiliates (overseas enterprises under the control of an institutional unit resident in the UK) and other partnership agreements would offer enhanced coverage. The OfS may consider collecting TNE fee income to improve accuracy. Both the OfS and HESA may consider collecting TNE fee income by activity type, although this information may exist beyond their regulatory scope.
FE FATS	The ESFA may consider collecting information on college corporations' overseas revenues as part of their annual financial reports.
ELT FATS	English UK may consider surveying their members' foreign affiliates.
Schools FATS	There may be a significant research gap here. Working with the International Schools Consultancy to identify UK-headquartered international schools groups represents a sensible first step. However, from the perspective of international trade, it is important that FATS continue to be distinguished from other partnership agreements (franchising etc.).

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Published 9th March 2023

By Department for Business and Trade

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