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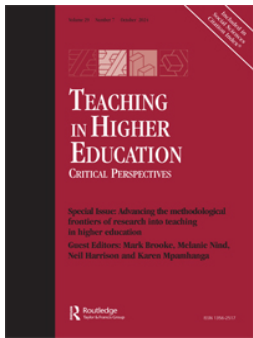
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# Teaching in Higher Education

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# Educationally authentic assessment: reframing authentic assessment in relation to students' meaningful engagement

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## ABSTRACT

With increasing calls for authentic assessment in higher education, the reference point for authenticity has been questioned. Typically, researchers define authenticity in relation to purposes of higher education, which are contested. Advancing the notion of educational authenticity rather than professional, societal, disciplinary, or developmental authenticity, we shift the reference point from outcomes to the process of meaningful student engagement. To illuminate features of educational authenticity in assessment, we surveyed students about their most interesting, engaging assessment and analysed 302 explanations why that assignment was so engaging. While many students cited real-world connections, consistent with most authentic assessment literature, more described having choice in some aspect of the assignment. We examined how choice, not typically a defining feature of authentic assessment, and real-world connection mattered to students and promoted meaningful engagement. Understanding and designing for educational authenticity can lead to various, valued outcomes highlighted in existing authentic assessment literature.

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Higher education; student engagement; interest; authentic assessment; choice

## Introduction

Authenticity is increasingly touted as a key feature of assessment designs that promote learning in higher education (HE), though its reference point is rarely learning itself. We centre meaningful student engagement as the reference point for authenticity, decoupling it from debates about the purposes of HE learning to interrogate students' perceptions of the process of learning-rich assessment.

Authenticity in assessment in HE is typically defined as authentic to 'real world' needs, and, specifically, employment tasks (Ashford-Rowe, Herrington, and Brown 2014; Sambell, McDowell, and Montgomery 2013; Sokhanvar, Salehi, and Sokhanvar 2021; Villarroel et al. 2018). For example, Villarroel and colleagues (2018), described authentic assessment as 'aim[ing]to replicate the tasks and performance standards typically found in the world of work' (840). This reference point is consistent with wider trends

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in HE policy-making that emphasise HE's role in preparing graduates for careers. We call it 'professional authenticity'.

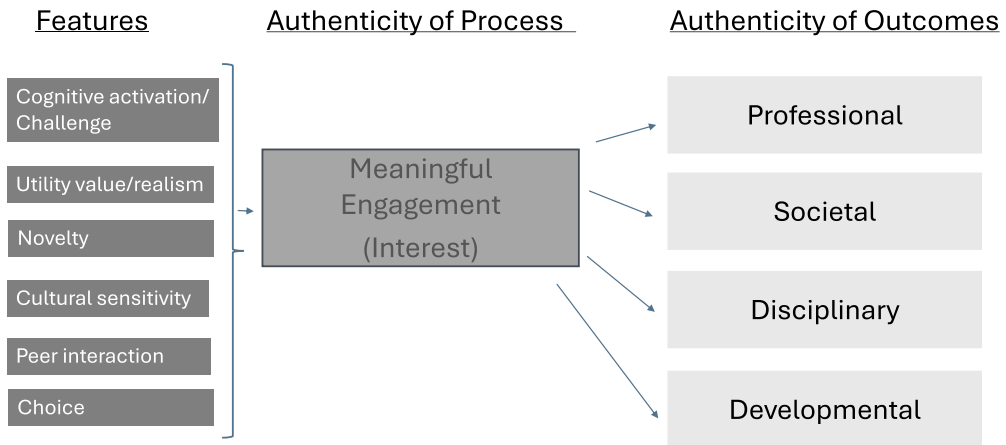
Authenticity, though, has been defined in relation to other purposes and outcomes of HE. McArthur (2016; 2023), for example, defined authenticity in relation to the broader society and its needs, including social justice, which we call 'societal authenticity'. Her reference point is still to the 'real world', but a world beyond employment. Quinlan and Pitt (2021) proposed that authenticity could be defined in relation to the conceptual, epistemological, social, material and moral conventions of the discipline that students were studying, calling this form of authentic assessment 'signature assessment'. We call it 'disciplinary' authenticity. Vu and Dall-Alba (2014, 786) adopted a human development aim of HE, arguing 'Assessment is authentic when students are ... supported in ... their efforts to become more fully human'. Nieminen and Yang (2024) developed this idea as 'assessment for becoming'. Ajjawi et al. (2023) referred to this approach to authenticity as 'ontological fidelity'. We call it 'developmental' authenticity.

Our aim is not to make a philosophical argument about which purpose of education should be privileged when defining authenticity, but to flesh out a pragmatic, process focus that could achieve any of these purposes depending on students' interests and goals. Students want assessment to be relevant to their interests and aspirations (Ajjawi et al. 2020). Thus, addressing Forsyth and Evans's (2019) question of *whose* authenticity matters, we centre students' perceptions, like Ajjawi and colleagues (2023) do in their brief proposal of psychological authenticity. However, we explicitly focus on educational processes and design features, building a theoretical and empirical foundation for *educational* authenticity.

## Conceptual framework and factors promoting meaningful engagement

We argue that assessment is educationally authentic insofar as it supports students' meaningful engagement. That is, the reference point is the *process or experience* of engagement with learning, not a specific, value-laden outcome such as employability, social reform, disciplinary expertise, or personal formation. As illustrated in Figure 1, students may fulfil *any or all* of the purposes of HE referenced in the authentic assessment literature through meaningful engagement, which is prompted by specific design features reviewed below. We focus on the first two columns of the figure (design features and process) in this study but have contextualised these steps in the wider literature in the third column and will return briefly to the outcomes column in the discussion.

Because our emphasis is on meaningful engagement, rather than instrumental, extrinsically motivated engagement, we focus specifically on research on the psychological state of interest. Interest is defined as 'increased attention, effort, concentration and affect during engagement' that is associated with meaning-making and deeper understanding (Renninger and Hidi 2016, 9). It is often closely related to enjoyment and other positive emotions (Pekrun et al. 2017). Interest motivates students toward many positive learning behaviours that lead to higher academic achievement and influence career decision-making and success (Harter et al. 2016; Jansen, Lüdtke, and Schroeders 2016; Nye et al. 2012; Quinlan and Renninger 2022; Renninger and Hidi 2022; Sansone et al. 2019). Interest is rewarding (Gottlieb et al. 2013), thus students seek it in their university programmes (Vulperhorst, van de Rijst, and Akkerman 2020) and careers (Gallup 2019).



**Figure 1.** Educational authenticity defined with antecedents (design features) and outcomes.

In short, we operationalise meaningful engagement as interest (Quinlan *in press*) and use interest-based assessment as the reference point for educational authenticity. To understand how to design for educational authenticity, we need to understand the features that promote students' interest.

Interest theory emphasises the interaction between students and their environments. This theoretical assumption is consistent with the view that students are co-producers of their HE journey who actively make choices, seek out resources, and invest in processes to construct their own educational experiences (McCulloch 2009). That is, students co-produce their engagement behaviours with institutional actors who create institutional inputs and conditions for engagement (Kahu and Nelson 2018).

Because interest theory assumes that students' interests are mutable and can be developed through good instructional design, much research in this tradition has focused on factors that stimulate and support students' interest. Key instructional design features associated with interest include positive perceptions of the teacher, cognitive activation, utility value (relevance of the information), cognitive incongruity, novelty, cultural sensitivity (likely via relevance), peer interaction, hands-on activity, and choice (Guo and Fryer 2022; Hecht, Grande, and Harackiewicz 2021; Patall, Cooper and Robinson 2008; Quinlan 2019; Quinlan, Thomas, and Hayton 2024; Rotgans and Schmidt 2011). These factors have been identified in learning rather than assessment situations. Given that students typically complete assessments independently of teachers, students may not emphasise interactions with teachers in this context. Cognitive incongruity is linked with confusion, which may promote interest in some learning contexts, but be stressful under assessment conditions (Lodge et al. 2018; Quinlan, Sellei, and Fiorucci 2024), so we do not expect students to cite it.

Choice is a pillar of learning personalisation, which is receiving increasing attention with expanded use of technology and learning analytics in education (Li and Wong 2021). Personalisation is 'tailoring learning for each student's strengths, needs and interests – including enabling students' choices in what, how, when and where they learn – to provide flexibility and supports to ensure mastery of the highest standards possible' (Patrick, Kennedy, and Powell 2013, 3). Enabling students to make choices based on

their individual interests and cultural relevance is key to individualising content, which should promote students' motivation (Kucirkova and Linn 2021). Though embraced with younger students, this approach is less well-developed in higher education (Zhong 2023). Choice in extended, larger tasks such as the kinds of coursework assessments typically discussed in the authentic assessment literature may be particularly important to interest-based assessment.

## Assessment and meaningful engagement

Villarroel and colleagues (2018) systematically reviewed core concepts across 112 papers to propose that authentic assessments are defined by: (a) realism; (b) cognitive challenges such as problem-solving and other higher order, transferable skills; and (c) the development of evaluative judgment, the ability to judge the quality of their own work. Students seem to find authentic assessments, defined in this way, more engaging and interesting than traditional, decontextualised exams and assignments (Pitt and Quinlan 2022; Sokhanvar, Salehi, and Sokhanvar 2021).

Typical features of authentic assessment partially converge with those that promote interest. Realism is consistent with utility value/relevance while cognitive challenge is consistent with cognitive activation. Collaboration is referenced in both sets of literature, though there is less agreement on it, suggesting it may not be a central feature either for stimulating interest in education generally or, specifically, in assessment.

Choice is not typically a defining feature of authentic assessment (Ashford-Rowe, Herington, and Brown 2014; Villarroel et al. 2018), though some research on specific assessment strategies such as blogs emphasises the value of creativity in content and format in engaging students (Christie and Morris 2021). However, choice is the primary focus of inclusive assessment practices and is generally valued by students (Tai, Ajjawi, and Umarova 2022), though some concerns have been raised about fairness and equivalences when presenting a range of options (Morris, Milton, and Goldstone 2019; O'Neil 2017). Because inclusive assessment is traditionally linked to disability or social disadvantage, its focus is more on customisation to students' different strengths and abilities, not the individualisation function of personalisation that uses choice to promote interest (Kucirkova and Linn 2021).

Because we conceptualise meaningful engagement as a precursor to a range of HE learning outcomes, we do not pit one traditional reference point for authenticity (e.g. professional work) against another (e.g. the discipline, society, or students' development). Rather, focusing on what students find most interesting illuminates educationally-relevant authenticity. In short, the reference point for authenticity is effective, meaningful student engagement with learning itself. Because we view educationally authentic assessments as interest-based assessments, the factors briefly reviewed above constitute key principles of educationally authentic assessments.

## Research question

In this study, we ask: What makes assessment in HE interesting and engaging for students? We analyse examples of assessments students identified as most interesting/engaging, focusing on their explanations for those selections. We then compare the design

affordances they highlighted with the extant literature summarised above to shed light on educational authenticity.

## Methods

### *Design*

This study is an example of institutional-level student partnership in assessment (Chan and Chen 2023). The project was conceived and led by a student union officer (second author) on behalf of the university's student union, with academic expertise from a higher education researcher (first author) and assistance in managing the partnership from a Divisional director of education (third author). Prompted by student dissatisfaction with traditional assessments, we intended to inform policymaking and practice within programmes and across the university by systematically gathering and feeding input back to academic divisions and into a revised institutional assessment and feedback policy and subsequent curricular reforms. Thus, the design is well-suited to understanding students' perspectives. Our process may be instructive for other universities seeking to define interest-based, educationally authentic assessments in their own contexts.

### *Participants*

With ethics approval, we surveyed 668 students (438 Female: 191 Male) across foundation year through to master's level, representing a range of fields including arts/humanities, social sciences, and sciences studying at an English university. Of these respondents, 45% ( $n = 302$ ; 206 Female; 81 Male) volunteered explanations that we focus on here. The institution enrolls a racially diverse group of students from various educational backgrounds. A large proportion are first-in-family to attend university. Most are full-time, 18–22 year old students from southeastern England. Entry standards are average for the sector, and it is ranked in the middle of many league tables, suggesting that students and their experiences are typical for the sector. We collected demographic information about academic division, stage of study, entry qualification, gender, and whether they had an individual learning plan (ILP) in place to accommodate a disability. Most participants studied Social Sciences (65%), with 23% from Arts/Hums and 12% from Sciences. The respondents ( $n = 302$ ) were primarily first (23%), second (26%) or third year (29%) students, with fewer foundation year (1%), 4th year (6%) and master's (15%) students. Most had A-Level qualifications (60%), some had both A-Levels and BTECs (4%), 11% held international baccalaureates, and 4% held only BTEC qualifications. Just over a quarter (26%) had an ILP.

### *Procedures and measures*

Participants responded to a 10-minute survey in which they were asked to 'Briefly describe the most interesting, engaging assessment you have done here at the university', rate their emotions, and a series of items that described the assessment (reported elsewhere in Quinlan, Sellei, and Fiorucci 2024) and provide demographic information. In this paper, we focus on the qualitative data from the open-ended question, a dataset of

16,676 words. The open-ended question and overall survey design were slightly adapted from Quinlan (2019) and pilot-tested before administration.

### *Reason for most engaging*

When answering the open-ended question, 302 students (45%) voluntarily offered reasons for why they found this assessment particularly interesting. Braun and Clarke's (2021) six-step reflective thematic analysis process was used, initially aided by Excel and then SPSS 28, as each answer was short ( $M = 25$  words each). Each student's answers occupied a row in the spreadsheet, with columns for each question. We added columns next to the original data with our own codes for their reasons and assessment types described (see below).

After familiarising ourselves with the data, the first author coded each explanation inductively, initially staying close to students' own words to reflect their views as much as possible, then combining related codes into a smaller set. We used codes that reflected the data overtly, rather than ascribing implicit or implied meanings (Table 1). When students gave multiple explanations, we assigned those comments to multiple codes accordingly. Each reason had its own column (0 = absent from explanation; 1 = present in explanation). The spreadsheet layout allowed us to easily see the explanations in the context of the student's original answers and to sort and re-sort the data as we refined the coding. In Table 1, we retrospectively aligned the inductively-derived codes with the deductively-derived features summarised in literature in the conceptual framework. While some codes could have been combined under the broader features identified in the literature, keeping them separate enabled us to reflect what was most salient to students. Finally, in SPSS 28, we calculated frequency of each reason, ran cross-tabulations between reasons to identify patterns of overlap and better characterise relationships between the themes, and justify our focus on the most common codes.

We then analysed responses under the most frequent codes in greater detail, generating and naming sub-themes within them through repeated reading, drawing on our subjectivity as an analytic resource. We were more interpretive with naming the sub-themes; the results section provides more detail on rationales for names. At this stage, we emphasised ideas rather than frequencies of sub-themes (Braun and Clarke 2021). We considered these data outputs in relation to literature summarised in the conceptual framework to flesh out the overarching theme of educational authenticity.

### *Type of assessment*

We coded the type of assessment, drawing almost directly on students' wording, yielding 12 different types. To better understand the 'reasons' codes, we examined whether there was a relationship between those codes and assessment types.

### *Interest and related emotions*

Students rated their emotions, using Pekrun and colleagues' (2017) Epistemically-Related Emotion Scales (EES). Students rated the intensity of feeling during the interesting assessment they described in the open-ended question for each of: curious, interested, anxious, enjoyment, surprised, frustrated, excited, puzzled, confused on a 5-point scale (1 = not at all; 5 = very strong). Unsurprisingly, students across all fields rated the positive emotions of interested, curious, enjoyment and excited moderately to strongly, with



**Table 1.** Explanations students gave for why assessments were engaging or interesting.

Codes	N	Coding rules/examples of keywords used by students	Alignment with features in literature
Career related	12	Explicitly referenced careers, future jobs or professional roles.	Utility value (relevance)/ Realism
Challenge	15	Described as ‘challenging’, ‘tough’, ‘stimulating’, or ‘pushing myself’	Cognitive activation/ Challenge
Choice	116	Used words such as ‘choice’ or ‘select’ in relation to topic, process, output format or a combination of these aspects.	Choice (may operate through relevance)
Collaboration	30	‘Group’ or ‘work with other students’	Peer interaction
Deeper learning	24	‘Learned the most’, encouraged to go ‘deeper’ or ‘in depth’, ‘thorough’, ‘above and beyond’	Cognitive activation/ Challenge
Game-like	6	‘felt more like a game’, ‘treasure hunt’, ‘Kahoot’	None explicitly
Integrative learning	5	Using multiple sources of knowledge, ‘recap’, ‘integrate’, ‘all knowledge’ across a module or more	Cognitive activation/ Challenge
Imagined lay person audience	9	Foregrounded a ‘popular’ or ‘casual’ or ‘lay person’ or ‘everyday’ audience. Foregrounded audience, not some aspect of it being real-world. These assignments only asked students to imagine an audience. If their outputs were presented to real audiences, they were coded ‘public demonstration’.	Utility value (relevance)/ Realism
Multi-media	16	Using multi-media or translating from one media to another	None explicitly
Novelty	32	Indicated that they hadn’t done it before or that it was ‘new’ or ‘different’ from other assessments.	Novelty
Public demonstration	12	Foregrounded presenting to a live audience through a performance, presentation, or poster. (Could be considered a subcategory of real-world application, but comments in this category foregrounded the audience, not the real-world connection).	Utility value (relevance)/ Realism
Real-world connection	52	Described real world problems, issues, tasks, settings, clients or audiences. Did not explicitly reference careers, even if examples were implicitly career-related. If examples involved imagined or real audiences, they foregrounded the real-world context, not the audience.	Utility value (relevance)/ Realism
Self-reflection	19	‘Reflect’ or ‘reflective’, included reports, logs and portfolios.	Evaluative judgement
Other (e.g. hands-on, feedback)	7	Coded close to students’ own words. Did not fit within other codes.	Hands-on

means ranging from 3.65 (excited) to 4.25 (interested). These ratings confirm that their described assessments were perceived not just as relatively interesting and engaging compared to other assessments, but, on average, as interesting and engaging in absolute terms.

## Results

Students described a range of assessment types that occur in HE, including written assignments, practicals, group projects, presentations and multiple-choice quizzes. Given the variety of assessment types, it is more useful for instructional design purposes to interrogate the affordances that students highlighted to understand how to create more engaging assessments that offer educational authenticity.

Table 1 summarises the explanations students offered for why the assessment was most engaging or interesting. Choice was the most common code (116), followed by real-world connection (52) and novelty (32). We examine these first three in greater detail.

Most answers coded ‘choice’ or ‘real-world connection’ only had this single code (only 34% and 27% of these statements had multiple codes. Supplemental Information, Table

1), reinforcing their unique contributions to interest and the importance of analysing them here. Where they overlapped with other codes, they tended to be with each other or with 'novelty'. Students often added explanations of 'novelty' at the end. In contrast, 'challenge' always occurred with another explanation; 79% of the answers coded with 'novelty' and 43% of the 'collaboration'-coded answers also had another code.

Choice was disproportionately cited for written assessments, while real-world connection was disproportionately cited for practical assessments and posters (Supplemental Information, Table 2).

## Choice

We identified the following sub-themes within choice: choice of topic; choice of process, method or techniques used to complete the assessment; choice of output format; or multiple types of choices such as both topic and process or process and format. We also coded a few simply as 'creativity' since the focus seemed to be on creative expression itself. Students often described the effects of choice on their engagement, describing the assignments as interesting, enjoyable, fun, or that they were able to be creative or invested more time and effort than usual. We illustrate those impacts in the quotes below.

### Topic

Nearly half of the 116 statements under the theme of choice emphasised choice of topic. In most of the examples, students describing having relatively free rein in selecting topics that addressed module learning outcomes. One arts/humanities student wrote, 'I find essays quite engaging when I'm given the option to design my own question'. A social sciences student concurred:

All of my assessments have been essays, whereby you answer a question from a list of questions or potentially write your own question with the module convenors approval. The most engaging essay I have written has been when I wrote my own questions because I could really hone in on what interests me. (Social Science)

In some examples students chose from a set of topics for an assignment. Occasionally an essay question was set, but it was flexible and broad enough that students could answer it drawing from a wide range of sources or adopt their own perspective on the topic.

While many of the assignments were written assignments and variants of essays, as shown in Supplemental Information, Table 2 above, other types of assignments were also cited. These included 'Group presentation – analysing a company of choice of ethical issues' (Social Science), posters 'My Biodiversity poster assignment; we could focus on a place that interested us, rather than being limited by a more specific assignment question' (Social Science), and other variants, 'Colloquium Reports ... writing about any interesting topic provided me a reason to learn about interesting parts of physics' (Science).

Students sometimes became so involved in the assignments that they described their topic in detail – even assignments that they had written months or years ago:

For my Changing Literature module for English Lit in first year, I did a research essay where I discussed the female archetype of The Maiden in relation to the characters of Miranda in The Tempest and Lydia Bennet in Pride and Prejudice - how their father figures shelter

them, letting their naivety guide their judgement, leading to impulsivity in terms of romantic love. (Arts&Hum)

Student quotes suggested that students sometimes chose more difficult topics due to their interest, or that they put in more effort or went deeper than was required:

Assignments for [a botany module], particularly the dichotomous identification key enabled me to explore my interests in a particular group of plants - conifers and gymnosperms. I enjoyed the academic challenge of figuring out how to differentiate distinct plant taxonomies by binary questions to family level and practice creating a practical guide for field identification. Although I complicated the assignment and did not select a variety of plant families so I could explore my own interests, [my teacher] could see that I was passionate about demonstrating my understanding of phyllotaxy and plant morphology. From this project, I followed up with creating my own plant voucher specimens of critically endangered conifers, a former assignment that was removed but nevertheless was encouraged as a practical ethnobotanical skill that I greatly value from the course. (Science)

Focusing on topics that interested them and were personally valuable also promoted their enjoyment:

Essay title was “What makes an interactive or immersive story experience meaningful?” - I have genuinely never had so much fun writing an essay as we chose what we wanted to discuss in the essay. I spent hours coming up with ideas and linking points to how the text was meaningful - having a text that was diverse and culturally impactful really helped to find how meaningful it was. (Arts&Hums)

Choosing the topic or the content that supported an argument helped them to be more invested in and build a sense of ownership in what they were doing. This content may go beyond what was explicitly taught in the module.

So far I have really enjoyed the assessment for ... Biodiversity. We had to make a poster promoting the biodiversity of our country for a conference. I've enjoyed the freedom you have to choose what you do and really make it yours.

Any assessment where I ... was allowed to explore the point I was making with films I love. E.g I was making a point about sound and film and used *The Chronicles of Narnia: The Lion, The Witch and The Wardrobe* final battle. (Arts&Hum)

In a handful of cases, students seemed not only to feel ownership in their work, but were able to express their own views. Note the original capital letters in this student's comment and the exclamation marks:

Recommendation Report – we had to not only inform ourselves of updated legislations and research evidence, but ALSO give ... our OWN recommendations concerning how we would implement those personally! My field is forensic psychology, so it was extremely fun to do this assignment! (Social Science)

Another student wrote, ‘My assignment on why social injustices affected the law was the most interesting essay I've written. I had to conduct my own research as to why I feel the way I do about the law system’ (Social Science).

While students occasionally mentioned employment-related skills in comments coded ‘choice’ related to topic or content, choice was described more often in terms of personal relevance, not occupational relevance.

### Process

Some student comments focused less on the topic and more on aspects of the process itself, often because it engaged them in novel tasks, real world tasks, or processes that will be helpful beyond university:

I had to produce a TV News Package. This involved finding and researching a new story, writing a script, and editing the footage I had recorded. I really enjoyed finding people to interview and conducting the interviews. Although the assessment was a lot of hard work and was harder than the 2,000-3,000 word essays I was producing for my History modules, I really enjoyed the process of making the package, and is something I would gladly do again. (Arts&Hum)

As a drama student the most interesting assessment is obviously the practical performances because I love building a performance from a brief, exploring different readings and techniques that can enhance the performance ...'. (Arts&Hum)

The research proposal for advanced topics in cognitive development - it allowed me to be as creative as possible in designing a study as this won't actually be conducted I could have free reign on materials, proposed sample, and why I think this study would be valuable in the field of research.

Other students referred to the degree of independence and/or support involved:

I study computer science. The most engaging assessment I've had so far was in first year where I got to do a project about content we learnt last term, by myself with enough time. Relying on teachers virtually whenever I need it. (Sciences)

Some highlighted longer time allotments or higher word counts that allowed them to explore more deeply, 'An essay where we got multiple choice in what to do and had a large enough word count to explore it properly' (Social Science).

### Output format

A few students emphasised choice around the format of the final output, 'group assignment in criminal law first year. We had a project with a problem scenario and had to work as a group and ended up making a video where we gave an oral presentation' (Social Science). Or another student, 'I was given the choice of several forms of assignment for a module on Dystopian literature, and the option I chose was to write a short story about a dystopian world'. (Arts&Hum)

### Multiple elements of choice

About one in eight students described multiple elements of choice, including combinations of topic, process, and choice: In this first quote, the student must choose the format (i.e. a miniature house) and the content (i.e. what poetry she would display). There are also elements of developing voice related to developing something 'personal to me':

My final project for Poetry Beyond Text was my favourite and most engaging. We were able to choose a creative option and I decided to build a miniature house and display poetry on the inside. This really engaged me as it made me think about the poets we looked at and how to apply what I had learned from them to develop something personal to me. (Arts&Hum)

This student celebrated both process and content choices, ‘Popular science report. Got to utilise narrative and less scientific terminology while also explaining a topic I was interested in’. (Social Science)

In another assessment, a group had a choice of all three: topic, process (i.e. collaboration) and the final output (i.e. debate structure):

We had to participate in a wildlife conflict debate and express our views as stakeholders in that debate, providing evidence for our points. It was interesting to research about our chosen wildlife conflict and the views associated with our stakeholders, even from the animals’ perspective. We had to engage with our group members frequently and had to create a debate structure that got our points across effectively ... (Social Sciences)

### ***Creativity***

Comments in this category explicitly used the term ‘creativity’ or ‘creative’, implying that students appreciated opportunities for creativity itself. These comments sometimes reflected novelty. As described above, novelty tended to overlap the most with other codes, including the theme of choice, ‘As a History student one of my best assessments was ... where I got to write a plan for a museum exhibit. It was fun to do something creative rather than a normal essay’.

Creativity also sometimes explicitly meant making something concrete, rather than the abstraction of a written product, ‘Year 1 mechanics module, make a gear train and have it laser cut. Interesting to learn, design, simulate and create something’. (Science)

### ***Real-world connection***

We identified a set of sub-themes for real-world connection that capture which aspects of the assessments were connected to the ‘real’ world: issues (similar to topics above), tasks (similar to process above), real or imagined clients or audiences and; working in real places. Many assignments combined multiple aspects of real-world connection.

### ***Issue (topic)***

As with choice above, students’ most commonly referenced the topic or content of the assignment. We called this sub-theme ‘issue’ because most of the topics discussed were issues of current social or political concern, such as unemployment in the UK, royal prerogative, lack of diversity of the US Supreme Court, war crimes, Covid-19 and its impacts on different groups, women’s rights, or technological innovation. For example:

Discussing and analysing to what extent women rights are in crisis. This assessment explored the progress within society in women’s rights socially, politically and economically. However it also showed there are significant progress that is still yet to be made as their rights are still facing backlash especially within traditional governments. I completed a 2000 word essay exploring women’s reproductive rights, political rights and working rights. writing this essay researched into the new laws of women’s rights being restricted such as the Roe V Wade turnover in 2021 where women right to abortion in America had restrictions put in place. (Social Science)

Another student wrote, ‘The intellectual property law question required me to analyze the operations of cultural institutions like museums ... in light of emerging technological innovations’. (Social Science)

### **Tasks (process)**

Students also explicitly described processes they were asked to do. We have referred to processes as ‘tasks’ here because teachers explicitly designed the task itself to mimic a professional task, rather than left the student to devise a process creatively. These examples included simulations in business, politics and international relations, and law, such as, ‘In Business Finance we have a fictional sum of money to invest to investigate academic theory and strategies. Completing it in person and evaluating how the theory actually worked has been very beneficial in remembering and applying’. (Social Science). In another social science class, ‘... We did a mock Convention of the Parties for Climate Change and Conservation ... One part consisted [of] making a report for our selected country and the other was taking part in the COP as a class’. A law student enjoyed, ‘Mooting and negotiation’, while a sciences student commented on working with real material objects, ‘Being given a real bone and being told to describe features on the given bone’.

### **Real or imagined clients or audiences**

Students sometimes emphasised that they were preparing outputs for real clients:

I was assessed on ... working with a client at [the University’s] Law clinic. So I went through all the stages of researching the area of law, meeting the client, interview, drafting emails and letters which my supervisor would then finalize and send to client ...

Some emphasised focusing on imagined audiences, such as policy makers or the public, ‘Briefing note in privacy and data protection law where I was able to make a poster advising parents on the dangers of online services’.

### **Real places**

Observing content in real, local places where they lived, worked, or shopped added an element of realism. ‘I ... had to go to a local area and note down crime preventative measures and then had to write a reflective report describing what I saw and how I felt before and after’ (Social Science). Another student wrote, ‘A retail sales presentation. We had to go to [a shopping mall] and see and compare two different stores, then do a 20 minute presentation on the stores. It was engaging and different to most assignments’. (Social Science).

### **Multiple**

Some assessments had multiple elements of real-world connection. In computing, the task of writing code is done by professional programmers, so the typical assessment process is already real. When this typical task was paired with writing code for real-world problems, it led to greater engagement:

Programming in C ... was the most engaging because we would have to write code based for real life examples. It feels more effective when you do assignments that the questions are based on the real world not some silly hypothetical ... (Sciences)

The following example combined a real task (an intervention proposal) with a real-world issue, ‘An intervention proposal where I came up with an intervention to tackle a real-world problem in the workplace’ (Social Science).

While the intervention proposal in the previous example may have been written for an imagined audience such as a company HR office, it wasn't explicitly mentioned. In contrast, this student highlighted the issue (consent and capacity), the task (briefing note), a real audience (the National Health Service) and the surrounding real-life context:

Medical ethics briefing note- consent and capacity. It was a briefing note advising the NHS on the legal and ethical implications of obtaining a court order to force a planned C-section on a non-consenting patient ... I liked it because the topic is interesting and it allowed me to explore beyond the legal boundaries of the case and consider other elements along with the law ... (Social Science)

Several students showcased field work in which they engaged with real-world issues, via professional tasks in real places nearby, 'Performed Great Crested Newt population surveys on campus ... Assessment used our own data and required ecological knowledge at a realistic scale' (Science).

## Discussion

Most literature on authentic assessment argues for authenticity with reference to a specific purpose or desired outcome of education, yielding what we call professional authenticity (when replicating workplace tasks) (e.g. Ashford-Rowe, Herrington, and Brown 2014; Villarroel et al. 2018;), societal authenticity when emphasising social contribution and transformation (e.g. McArthur 2016; McArthur 2023), disciplinary or 'signature' assessment (when emphasising disciplinary practices) (Quinlan and Pitt 2021) or developmental authenticity when emphasising human development, 'becoming' or self-formation (Ajjawi et al. 2023; Nieminen and Yang 2024; Vu and Dall'Alba 2014). Rather than focus on the product or outcome of higher education as the reference point for authenticity, our contribution is to shift attention to the process of meaningful engagement and the design features that promote it – what we call educational authenticity (Figure 1). This shift matters because it bridges literature on engagement and interest with assessment literature. It also invites educators to include a wider range of design features than most authentic assessment literature emphasises, such as using principles of high impact practices to promote student learning (see Pitt and Quinlan 2022; drawing on Kuh 2008).

As student comments indicated, engagement underpins students' achievement of a variety of HE outcomes by motivating them to work harder. Which outcome is most relevant likely depends on the students' goals and interests, as illustrated in the range of student quotes provided. Across the set, we saw implicit examples of students valuing the outcomes associated with each of the four other types of authenticity, though we did not ask about or explicitly code for students' intended or actual outcomes. Doing so is a next step in understanding students' perspectives on authenticity in assessment.

## Choice

Choice, the most cited explanation for why an assessment was engaging, appeared to facilitate relevance, known to support interest (Hecht, Grande, and Harackiewicz 2021; Quinlan 2019). It may enable students to focus on the outcome that is most relevant to them, whether that is career preparation, social issues, delving into the discipline for its own sake, or self-development. There were examples of disciplinary and

developmental authenticity as students passionately delved into their subjects and revelled in make the assignment their own. As an assessment design feature, choice shifted the onus of personalisation from teachers – who cannot know the goals and interests of every student – to the students themselves, consistent with its use in individualisation of teaching with children (Kucirkova and Linn 2021).

While there is evidence linking choice with student interest (Patall, Cooper and Robinson, 2008), it has not been highlighted as a key feature of authenticity in HE assessment. Instead, choice has been advocated, with relatively little supporting evidence (see O’Neil 2017 as exception), as a primary way to implement inclusive education (Tai, Ajjawi, and Umarova 2022). We reframe choice, shifting it away from an accommodation for differently abled students to a vital tool for promoting students’ interest and, thus, a pillar of educational authenticity.

Our data suggest how students can be encouraged to exercise creativity and autonomy through choice. In studies where choice has been framed as a matter of inclusivity, the focus has been on output format (e.g. paper or presentation). Choices among prescribed output options have raised concerns about equity and equivalency (Morris, Milton, and Goldstone 2019; O’Neil 2017). In contrast, choice of topic was most frequently cited in this study.

Choice may need to be scaffolded as students build independence. Choice as enabling creativity may be particularly important for students studying arts or humanities. Understanding whether choice is also valued in other subjects, especially STEM subjects, and understanding how it might be implemented there is an important next step. In sum, these findings suggest that more attention needs to be paid to how to use choice(s), especially topic choice, in assessments. For example, educators might build in dialogues, reflective cover sheets or guidance into assessment briefs that prompt students to consider how they might productively use choice in assignments to further their own goals.

### ***Real-world connection***

The second most common explanation given by students was real-world connection. The most common theme under ‘real-world connection’ was ‘issue’, with students citing social, economic, or political problems or opportunities. While they may have been doing tasks that are relevant to employment, more explanations described being engaged by the social issue, consistent with societally authentic assessment (McArthur 2016; McArthur 2023) rather than employability development (Ashford-Rowe, Herrington, and Brown 2014; Villarroel et al. 2018). A smaller subset of comments coded ‘career related’ fit with professionally authentic assessment (e.g. Ashford-Rowe, Herrington, and Brown 2014; Villarroel et al. 2018). We conclude that realism needs to be interpreted broadly when designing for educational authenticity. Asking students to apply skills and knowledge to social issues offers both educational and societal authenticity and may promote cultural sensitivity in assessment (Quinlan, Thomas, and Hayton 2024).

### ***Novelty***

Although students commented on the novelty of their engaging assessments, a factor also known to trigger interest (Quinlan 2019; Renninger and Hidi 2016), novelty tended to be



double-coded, suggesting it may not be sufficient on its own to promote interest in HE assessment contexts. In contrast, most choice and real-world connections comments were single-coded, suggesting that they were primary while novelty was secondary. Seeking variety for its own sake is not likely to be an effective assessment strategy. Novel assessment tasks need to be purposefully aligned with intended learning outcomes (with professional, societal, disciplinary or developmental outcomes) and the substantive design features of educational authenticity highlighted in this study.

### ***Other design features associated with interest***

Collaboration was cited by a substantial subset of the students. As it was mentioned less frequently than other design features in both the interest literature and in the authentic assessment literature, we did not explore it in depth here. It warrants deeper investigation. While some of the real-world connection tasks were hands-on, this feature was not foregrounded as such, suggesting that when it is cited in the literature, it may apply only to a subset of students or operate through a real-world connection and not primarily through hands-on engagement. As expected, relationship with teachers, which were particularly important in other studies of interest (e.g. Quinlan 2019; Quinlan, Thomas, and Hayton 2024; Rotgans and Schmidt 2011), were not explicitly volunteered by students in this study. Cognitive incongruity also was not highlighted, likely because it promotes unproductive confusion (Lodge et al. 2018) in assessment situations.

### ***Limitations and next steps***

Students could only select among and reflect on the assessments they had experienced, so rarer types of assessment such as high-fidelity simulations are less likely to be included in the dataset even if they may be highly engaging. Any observational studies are limited by the practices of participants' universities.

By focusing only on features of the most engaging assessments, we cannot make causal attributions between these features and engagement, even if students themselves did so. It is possible that some of these features are experienced negatively if they are not accompanied by other supports that the students did not highlight. That is, we need to be cautious in assuming that every application of these design features will necessarily lead to particularly interesting and engaging assignments.

In future, it would be better to directly ask students to provide an explanation, not just a description; fewer than half of our respondents volunteered an explanation. Students studying discursive subjects (humanities and social sciences) were more likely to elaborate their responses than those studying sciences and maths, so other methods may be needed to capture STEM students' views.

Students may endorse a wider range of possible features/explanations than they might voluntarily write about, so future studies should ask students to rate the features expected to promote interest using well-designed scales. Future studies also could ask students to describe, comment on and rate features of their last assignment, ensuring a random selection of assignments, greater variability in students' engagement, and less reliance on participants' memory.

## Conclusion

We propose educationally authentic assessment to centre the process of meaningful engagement, rather than contested outcomes, in discussions of authentic assessment. Depending on teachers' and students' goals, educational authenticity in assessments may enable students to achieve any of the HE outcomes used as reference points for authenticity in existing authentic assessment literature, including professional, societal, disciplinary and developmental authenticity. Understanding how to design assessments for meaningful engagement (interest) is the next step in enhancing HE assessments. Choice, as well as real-world connections, may be key.

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