Diversifying curricula: how are people of colour represented in lecture slide images?

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Diversifying curricula: how are people of colour represented in lecture slide images?

Diversifying higher education curricula has been called for as one way to reduce racial inequalities in higher education. This study makes an original contribution by focusing on images of people in lecture slides. We explored how people of colour versus white individuals were portrayed in images (n=250) used in lecture slides in four first year core social sciences modules and whether the images were likely to be 'inspiring' to racially minoritised students. Drawing on visual content analysis used in textbook studies and thematic analysis, we developed a novel method of analysing lecture slide images. Only 12% of the images presented people of colour in positive, non-stereotyped and active roles that could be described as inspiring. People of colour were less likely to be presented and less likely to be featured exclusively in an image than white people. By applying a Critical Race Theory framework, we discuss implications for curricular reform.

Keywords: hidden curriculum, lecture slides, visual content analysis, racial inequalities, higher education

Introduction

Calls to diversify or decolonise higher education (HE) curricula (Douglas et al. 2020; Hall et al. 2021; Peters 2018; Thomas and Jivraj, 2020) have gained greater traction as universities seek ways to reduce racial inequalities. Efforts to diversify curricula to better reflect the histories, experiences, contributions, and aspirations of racially minoritised people[i] have unfolded in different ways in different countries. For example, the movement in South Africa has focused on decolonising (Meda, 2020; Mheta et al., 2018) while in Australia, curricular reconciliation is sought (Fildes et al. 2021).

In England, where this study is set, racially minoritised students are entering higher education at the highest rates of any groups of students (HESA, 2020). However, disparities persist between racially minoritised students and their white counterparts in their experiences (Office for Students, 2020), degree attainment (Richardson,

Mittelmeier, and Rienties, 2020), and employment outcomes (Li, 2018). The Office for Students (OfS) has set ambitious targets to eliminate all racial inequalities in degree attainment by 2030. Several prominent studies have recommended making changes in the curriculum to reduce attainment gaps (Dale-Rivas 2019; Mountford-Zimdars et al 2015), emphasising that universities need to attend to structural elements of the environment to achieve equality.

Students, too, have been calling for changes in their curriculum under hashtags such as #WhyisMyCurriculumSoWhite, #RhodesMustFall, and #LiberateMyCurriculum (Peters, 2018; Thomas and Jivraj, 2020). In response, recent studies have focused on the absence of authors of colour in course reading lists in various subjects (Adewumi and Mitton 2022; Adewumi et al, 2021; Borkin 2021; Schucan Bird and Pitman, 2020). Yet, racial representation and portrayals in other aspects of curricula have received little attention.

To our knowledge, no studies have investigated the ways that people of different races are portrayed in lecture slide images, although teacher-developed lecture slides constitute key curricular materials and are an important site for curricular reform. We interrogated the cultural sensitivity of the curriculum (Thomas and Quinlan, 2023) by examining the images of people used in lecture slides. We sought to determine whether there were differences in the way racially minoritised versus white individuals were portrayed in four core social science modules.

Literature review: Studies of images in the curricula

There is a growing body of literature investigating lecture slides in general, focussing mainly on their effectiveness in teaching and learning (Baker et al. 2018; Levasseur and Sawyer 2006; Strauss et al. 2011). Most found positive effects of the use of lecture

slides on students' academic performance as measured by exam results or surveys (e.g. Bartsch and Cobern 2003; Chen and Lin 2008; Raver and Maydosz 2010), though some showed no effect (Baker et al. 2018; Cosgun Ögeyik 2017) or even negative effects (Weatherley et al., 2003).

Several studies have treated images as one of the essential components of slides and demonstrated that images in lecture slides play a critical role in student learning. For example, Roberts (2018, 2019) found that a group of social sciences students who were taught with images in lectures were more engaged and had better learning outcomes than a control group without images. Some researchers have concluded that images used in lecture slides should be conceptually related to the texts to support students' learning (Baker et al. 2018; Bartsch and Cobern, 2003; Hallewell and Lackovic 2017; Tangen et al., 2011). Yet, Hallewell and Lackovic (2017) examined 145 photos from slides of 20 lectures in undergraduate psychology in 16 UK universities and found that two thirds of the photographs were not directly related to the content. Roberts (2019) found that only 'metaphorical or paradoxical' images and not those with literal meanings made a positive impact.

These studies suggest that the role of images in lecture slides warrants further research attention. Despite the importance of selecting the most appropriate images and applying them in meaningful ways, we found no research on the ways in which different groups of people were represented in lecture slide images or how those portrayals might affect students, particularly those from racially minoritised groups.

In contrast, there is a body of primarily US-based research that examines gender and, to a lesser extent, racial representation in images in textbooks at various levels of education. In HE, Ferree and Hall (1990) found racially stereotypical images in American sociology textbooks, with mainly white men depicted in the politics chapters.

Allen and Wallace's (2010) research on American government/politics textbooks revealed only 21% of a total of 1,645 roles occupied by African Americans were positions of power. In more recent studies, Eigenberg and Park (2016), and Park et al. (2018) found that white males tended to be depicted pre-dominantly as professionals in the US criminal justice systems in images in criminology textbooks, whilst Black males were typically presented as criminals. Park et al. (2018) also found the percentage of white people depicted as professionals (39%) was substantially higher than people of colour (28%). Woyshner and Schocker's (2015) content analysis of high school history textbooks in the US examined how Black women were portrayed. Looking beyond textbooks to other visual material presented to HE students and prospective students, Osei-Kofi and Torres (2015)' visual textual analysis of 20 US admissions viewbooks found stereotypical images of scientists as White heroic males. We draw on the concepts and methods used in these related studies to investigate images of people in lecture slides in first year social science modules. In doing so, we address key gaps in both the literature on making curricula more diverse and culturally sensitive and literature on lecture slides.

Conceptual Framework

We situate our study broadly within critical race theory (CRT), a cross-disciplinary social and intellectual movement that shifts attention away from racism as an individual act to the ways structural racism is embedded in society and enacted in policies, practices, and processes (Harper, 2012; Ladson-Billings and Tate, 1995; Ledesma and Calderón, 2015). CRT research has been used to show how race and racism manifest themselves in educational settings, including the curriculum and teaching practices

(Ledesma and Calderón, 2015). Spotlighting these issues enables educators to reconsider their practices through a CRT praxis.

Ladson-Billings (1995) also used CRT as a conceptual framework to argue for a culturally relevant curriculum that facilitates learners' socio-political awareness, enabling them to challenge hegemonic, taken-for-granted power structures. Thomas and Quinlan (2023) built on this CRT foundation, particularly Ladson-Billings' work, to conceptualize culturally sensitive curricula as those in which attitudes, teaching methods and practice, teaching materials, curriculum, and theories relate to, affirm and respect diverse cultures, identities, histories, and contexts. They operationalized this definition in their Culturally Sensitive Curricula Scales (CSCS) (Thomas and Quinlan, 2023; Quinlan et al 2022), a Likert scale survey that allows students to rate six distinct but related factors: *Diversity Represented*, *Negative Portrayals, Positive Depictions, Challenge Power, Inclusive Classroom Interactions and Culturally Sensitive Assessments.* Culturally sensitive curricula matter because they are associated with students' interest (Quinlan et al., 2022), especially among minoritised students (Thomas and Quinlan, 2023).

While racially minoritised students consistently rated their curricula as less culturally sensitive overall than white students across factors (Thomas and Quinlan, 2023; Quinlan et al., 2022), these differences were largest on *Positive Depictions* and *Negative Portrayals* (Quinlan et al, 2022). Therefore, we focus specifically on *Negative Portrayals* and *Positive Depictions* as a lens for analysing lecture slide imagery. *Negative Portrayals* capture the extent to which racialised minorities are represented in stereotyped or negative ways or seen as the source of social problems such as crime, violence, and poverty. *Positive Depictions* assesses the extent to which racially

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minoritised people are presented in positive ways, in terms of their strengths, having high income or education, or in positions of power or leadership.

Lecturers choose the content of their lectures, design their lecture slides, and choose images to illustrate the points they want to make. However, they may not be considering the range of potential impacts of the images used in lecture slides (Hallewell and Lackovic 2017). Unexamined and unquestioned by lecturers and students, lecture slide images may convey unintended messages, constituting part of what Jackson (1968) termed the hidden curriculum. Because the hidden curriculum is unexamined, deeply engrained structural racism is most likely to be present there. Using a CRT frame to analyse potential examples of racism embedded in the hidden curriculum of lecture slide imagery is important to understanding students' experiences, as well as assisting educators in challenging and changing this aspect of their curriculum (Cotton et al., 2013).

Research Questions and Aims

We address the following questions: how are people of colour and white individuals portrayed in the images used in lecture slides? Specifically, how often and how exclusively were people of colour portrayed in the images? What themes emerged, and are racially minoritised actors depicted differently from white actors? How inspiring are the images likely to be for racially minoritised students, and how different are results by modules? Through this empirical inquiry, we aimed to develop methods for CRT-inspired visual analysis of lecture slides, prompt critical reflection on the role of images in diversifying curricula, and build the foundation for further research on the impact of lecture imagery on students' engagement and attainment.

Materials and methods

Sample

All photos of people (n=269) were extracted from the lecture slides of all lectures given over 12week terms in four first year core (required) social science modules. The modules were taught in the 2020-21 academic year at a racially diverse university in the UK that is ranked in the middle of most UK league tables. University teaching staff are primarily white (including the four participating module convenors), while the student body ranged from 35-40% racially minoritised in those modules.

Lecture slides were downloaded from the virtual learning environment with the permission of the lecturers and ethics approval from the first author's department. After initial screening, 19 images were excluded as they did not show a person's face or it was impossible to code the race of the person depicted, leaving a corpus of 250 photos.

Measures and coding procedures

A mixed methods approach was used, drawing on techniques of visual content analysis (Bell, 2001) and thematic analysis (Braun and Clarke, 2008). Visual content analysis, as 'a systematic, observational method used for testing hypotheses about the ways in which [images] represent people, events, situations' (Bell, 2001:14), is efficient and robust for analysing a large number of samples, focusing on the literal representation in an objective way (e.g. counting numbers of racially minoritised vs white people in each frame). Quantitatively summarising across qualitative assessments addresses key criticisms of qualitative analysis alone (e.g. Baro and Eigenberg, 1993; Krippendorff, 2012; Silverman, 2011). In addition, we used thematic analysis to consider the importance of the cultural and social contexts of visual data that are crucial to the interpretation of their meaning (Peirce, 2000).

The approach, codes, coding scheme, and themes were agreed in a series of working sessions among the research team. The three researchers were from different ethnic groups, including Asian, Black, and white, and brought a variety of personal experiences of race and ethnicity. At the first meeting, all three researchers reviewed all the images, discussed general impressions, and potential approaches to coding. In a second working session, the researchers calibrated their visual content analysis (Bell, 2001) judgments of the following key measures (in bold italics), treating the whole image as the unit of analysis. After calibration through collaboratively discussing specific cases and clarifying coding rules until agreement was reached consistently, the first author coded all the images.

Visual content analyses were based heavily on Ferree and Hall's (1990: 504) categorisation of 'the depiction of individuals' and 'the social composition of photographs', used in their research on sociology textbooks in HE in the USA and adapted in other textbook studies (e.g. Baro and Eigenberg 1993; Love and Park 2013; Park et al. 2018). For this study, 'presence or absence of people of colour', and 'exclusiveness' were adapted.

Presence of people of colour (PoC) refers to whether a visually identifiable racially minoritised person was present in the photo (i.e. Black or Asian/people of colour). We use the terms racially minoritised and people of colour synonymously to refer to a broad, socially constructed category that, in our study, primarily included people of apparently African and Asian descent. This coding of race is blunt and may not match the self-identification of the people photographed. However, our aim was to capture broad racial categories as they would likely be interpreted at a glance by the intended audience for the slides (i.e. predominantly UK students). This approach assumes that people of colour are readily identifiable in white-majority societies and

experience various forms of discrimination and differential treatment based on quick visual appraisals.

Exclusiveness refers to whether a PoC appeared exclusively or not (Ferree and Hall, 1990; Allen and Wallace, 2010). Ferree and Hall argued that a racially exclusive portrayal (such as a portrait) conveys 'visual dominance' and 'greater sociological significance' (Ferree and Hall 1990: 506). For this study, we measured the frequency of exclusive and integrated representation of people of colour.

Inspiring for racially minoritised students was a holistic judgment of the image anchored in Positive Depictions (Thomas and Quinlan, 2023; Quinlan et al., 2023). We defined it as, 'whether PoC are depicted in positive, active roles to which racially minoritised students may wish to aspire, rather than absent, under-represented, or depicted in stereotypical or marginalised roles or as social problems'. For example, an image of Martin Luther King Jr giving a speech was considered 'inspiring'. An image in which a lone Black student appears in a class full of white students and a white teacher was not deemed inspiring due to under-representation.

To provide a more detailed analysis of the images and justify our broad assessment of 'inspiring' or 'not inspiring', we shifted the unit of analysis from the whole image to the roles of the primary actors and conducted thematic analysis. Thus, in the results section, we will present the results of the roles analysis before discussion of 'inspiring' images.

Roles of primary actors were coded in four stages. First, we identified the actors. Where only one actor was depicted, coding for a primary actor was straightforward. In images with multiple people depicted, we identified up to three actors based on their role in the image. For example, actors who were in the centre of the image or central to the action taking place (e.g., talking or gesturing) were coded. In

crowd scenes, such as a street full of commuters or protestors, we treated them as one actor. A total of 340 actors were coded from the 250 images. Second, we coded actors' role descriptions literally based on context, props, or uniforms (Rapley 2011; Strauss 1987). At this coding stage, visual data was transformed into text data which describes actors' roles in the way that they were depicted in the image such as 'fast-food worker' or 'student'. Third, these keywords of role descriptions were grouped to identify patterns and themes across 12 clusters (Braun and Clarke, 2008). When clustering roles, we drew on Woyshner and Schocker's (2015) analytic approach to coding the political and social status of Black women depicted in American high school history textbooks. We also adapted Allen and Wallace's (2010) analysis of marginalised or stereotyped representation of African Americans in American government/ politics HE textbooks. Finally, we grouped the second order codes into five broad themes, which involved broader structural and conceptual interpretation. Most of the images were subsumed under five themes: power (including business or thought leaders and jobs with state-sanctioned authority), other jobs, social problem (e.g., social conflict, poverty, vulnerable populations), immigrant, and daily life. More detail of the codes and themes is provided in the results (see Table 1).

Results

How often and how exclusively were people of colour (PoC) portrayed in the images?

Racially minoritised people (PoC) were represented in only one third of the images, whilst most images contained white individuals (87.2%). Out of the 250 images, only 32 images portrayed people of colour exclusively (12.8%), whereas White

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exclusiveness was 67.2%. The proportion of images representing PoC exclusively (39%, 32 out of 82 images) amongst all the images with PoC people was much lower than those of white (77.1%, 168 out of 218 images). The frequency and exclusivity analyses revealed that white people largely dominated images used in lecture slides, whereas PoC tended to appear and be represented exclusively much less frequently.

Analysis by actor: What themes emerged?

A total of 340 actors were identified from 250 images and labelled with role descriptions. In the first stage, actors were coded using terms that described the role they were playing in the photo (column 1 in Table 1); then related terms were clustered (column 2 in Table 1) and finally grouped into five themes (column 3, Table 1). For instance, businesspeople and scholars (role descriptions) were grouped as business or thought leaders (clusters), then categorised as 'Power' (themes after the last coding stage), alongside jobs with state-sanctioned authority (e.g. Members of Parliament, Royal family, police, teachers, National Health Service workers), consistent with the CSCS phrasing of *Positive Depictions* items (Quinlan et al., 2022). On the other hand, those jobs without state-sanctioned authority such as technicians, manual workers, and office workers as well as celebrities (e.g. actors and actresses, sports players) were put into the theme of 'Other jobs'. People participating in various protests and strikes or related to criminal activities were clustered as 'social conflict'. Social conflict codes were merged with images related to poverty and the vulnerable under the broad theme 'Social problem', consistent with the CSCS phrasing of *Negative Portrayals* (Thomas & Quinlan, 2023). The fourth theme, 'Immigrant', consisted of immigrants related to historical contexts such as the Windrush generation and Lascars. Lastly, people involved in various daily activities clustered into family or youth groups and were

thematically coded as 'Daily life'. There were a small number of 'unclassified' items (2.0%), which were difficult to code without more contextual information and treated as missing data. Overall, four in ten actors were interpreted as 'Power', which is the largest theme; followed by 'Social problem' (22.2%), 'Daily life' (21.6%), 'Other jobs' (12.1%) and 'Immigrant' (2.9%).

Table 1. Thematic analysis results at three coding stages

Role description	Second coding/ clustering	Themes
Executive board, Business person, IMF director Journalist, Scholar	Business or thought leaders	**Power 136 (39.2%)**
Politician, Army general, Queen, Royal family Soldier, Police Teacher, Healthcare worker, Nurse, Pharmacist	Jobs with state-sanctioned authority	
Electrician, Fast food server, Builder, Manufactory workers Miners, Seasonal worker, Delivery man, Mechanics, Office worker	Jobs without state-sanctioned authority	**Other jobs 42 (12.1%)**
Actor or actress, Sport player, Model	Celebrity	
Protesting (Black Lives Matter, Trade Union, anti-war, pro-EEC, Miners' strike) Criminal, Prisoner, Juvenile delinquent Victim (Murder, kidnap, war) Arguing, Fighting, Graffiti	Social conflict	**Social problem 77 (22.2%)**
Child in poverty, Debt-related, Unemployed	Poverty	
Medical patients, Elderly	The vulnerable	
Lascar sailors, Polish immigrant, European immigrant Windrush generation worker	Immigrant	**Immigrant 10 (2.9%)**
Commuter, Crowd, Daily activities, Holiday makers, Student	Daily life activity	**Daily life 75 (21.6%)**
Family (mother, father, couple, children, baby), Bride	Family-related	

Youth programme participants, Adolescent, Young people	Youth-related	
Science experiment participant, Lady Clough, Eton school students and Local boys, Lady escorted by police, Female voter	Unclassified	Unclassified 7 (2.0%)

Roles by race: Are RM actors depicted differently from white actors?

Analysis by race revealed that only one in four actors were racially minoritised, whilst the rest (73.8%) were white (251 actors) in Table 2. Out of the total of 89 PoC actors, only 23.6% were depicted in the theme of 'Power', which combined 'Jobs with state-sanctioned authority' (19.1% RM) and 'Business or thought leaders' (4.5% RM) (Table2, Figure 1). Compared to racially minoritised actors, the proportion of white actors classified under the theme of Power was notably higher (45.8%) (Figure 1). The proportion of racially minoritised actors classified under 'Other jobs' was high, since Marcus Rashford, a famous Black British football (soccer) player and successful social reformer accounted for the majority of 'celebrity' (10 times). This result showed that PoC were much less likely to be represented in powerful social positions, compared to white actors.

Table 2. Thematic coding results by ethnicity

Theme	PoC (N=89)	White (N=251)
Power	**21 (23.6%)**	**115 (45.8%)**
Jobs with state-sanctioned authority	17 (19.1%)	83 (32.2%)
Business or thought leaders	4 (4.5%)	32 (12.4%)
Other jobs	**18 (20.2%)**	**24 (9.6%)**
Jobs without state-sanctioned authority	5 (5.6%)	13 (5.0%)
Celebrity	13 (14.6%)	11 (4.3%)
Social problem	**20 (22.5%)**	**57 (22.7%)**
Social conflict	19 (21.3%)	44 (17.1%)
Poverty	1 (1.1%)	7 (2.7%)
The vulnerable	0	6 (2.3%)

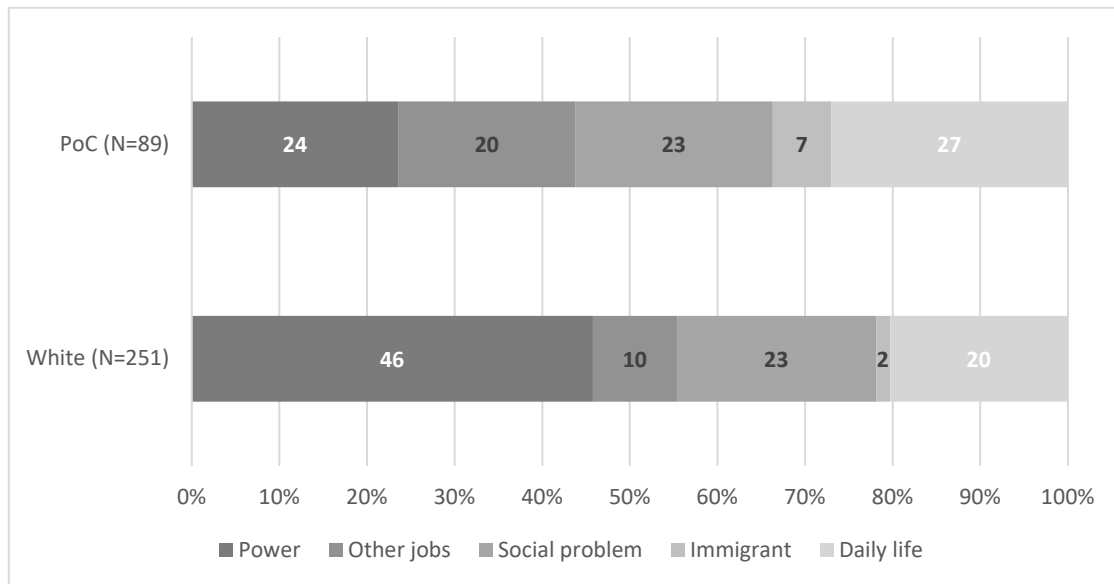|		
Immigrant	**6 (6.7%)**	**4 (1.6%)**
Immigrant	6 (6.7%)	4 (1.6%)
Daily life	**24 (27.0%)**	**51 (20.3%)**
Daily life activity	9 (10.1%)	25 (9.7%)
Family-related	13 (14.6%)	19 (7.4%)
Youth-related	2 (2.2%)	7 (2.7%)

Figure 1. Thematic coding results by race

How inspiring are the images likely to be for racially minoritised students?

The concept of 'inspiring' was framed as images capturing racially minoritised people positively and actively, instead of being absent, under-represented, or presented stereotypically or problematically. Only 31 images were interpreted as 'Inspiring' (12.4%), whereas the majority (204 images, 81.6%) were regarded as potentially 'Uninspiring' for racially minoritised students.

Analysing the roles occupied by people in the 31 images deemed 'Inspiring' overall (Table 3), 43.8% of PoC roles in inspiring images were related to Power; 31.2% to Other jobs and 25.0% to Daily life. People of colour in positions of power tended to be business or thought leaders (e.g. business person, Martin Luther King), Jobs with

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state-sanctioned authority (e.g. teachers, healthcare workers), and Celebrity (i.e. Marcus Rashford). Other inspiring roles were found in daily life activity (e.g. family, a bride and bridesmaids, students).

In addition to the images considered inspiring, we found 15 images (6.0%) presenting scenes related to various types of 'protesting' (e.g. Black Lives Matter, Miners' strikes, Trade Union strikes); 9 of the 'protesting' images (60%) included PoC. We debated whether these were 'inspiring' since they demonstrated acts of courageous resistance and shows of power in solidarity against injustices. However, we questioned whether they represented a vision to which students would want to aspire with an HE degree. Therefore, we treated 'protesting' as a separate category, not counting them as either 'inspiring' or 'uninspiring'.

Table 3. Inspiring images of PoC with role description

Role description	Theme
Business woman, executive board	**Power** (43.8%)
Teacher, healthcare worker, pharmacist	
Martin Luther King (political leader)	
Kwame Ture (born Stokely Carmichael, author of Black Power)	
Sadiq Khan (Politician)	
Francis Fukuyama (scholar)	
Samira Ahmed (BBC presenter)	
Marcus Rashford (football player and social reformer)	**Other jobs** (31.2%)
Family (a couple and a baby, a father and a son, family playing the football)	**Daily life** (25.0%)
Youth (playing in the youth centre)	
Bride and bridesmaid	
Students studying in the classroom	

How different are results by modules?

Three measures of cultural sensitivity of images were analysed by module: Presence of

people of colour, Exclusiveness, and Inspiring to racially minoritised students. Table 4 demonstrates that numbers of images for each module varied; 122 images were extracted from Module1 (48.8%), followed by 66 from Module4 (26.4%), 41 from Module3 (16.4%); and 21 from Module2 (8.4%). Furthermore, there was a wide range of percentages of PoC presence and PoC exclusiveness, as well as inspiring images, although the three measures tended to show the same trends. For example, 42.6% of the 122 images of Module1 accounted for PoC, and 17.2% exclusively represented them; these figures were considerably higher that other modules, particularly compared to Module4 (19.7% for PoC presence, 7.6% for PoC exclusiveness). Module1 also contained the largest proportion of Inspiring images (23.8%), whilst only 1.5% of the images extracted from Module4 were likely to be inspiring to students of colour.

Table 4. People of colour (PoC) exclusiveness and inclusion, and Inspiring images by modules

	Module1		Module2		Module3		Module4	
	N	%	N	%	N	%	N	%
PoC presence								
	52	42.6	5	23.8	12	29.3	13	19.7
Exclusive portrayal of PoC								
	21	17.2	2	9.5	4	9.8	5	7.6
Inspiring images								
Inspiring	29	23.8	1	4.8	0	0.0	1	1.5
Uninspiring	90	73.8	20	95.2	37	90.2	57	86.4
Protesting	3	2.5	0	0.0	4	9.8	8	12.1
Total (n=250)	122		21		41		66	

Discussion

Using CRT-inspired visual content analysis and thematic analysis of lecture slide images, we found that people of colour (PoC) were less frequently represented than white people (33% vs 87%) and much less likely to be portrayed exclusively in imagery

(13% vs 67%). Our findings on the presence of PoC were similar to previous textbook studies[ii] (e.g. 29% in Ferree and Hall (1990); 28% in Park et al. (2018); and 27% in Eigenberg and Park (2016)). However, at 13%, the percentage of PoC represented exclusively was lower than in the textbook studies (e.g. 25% in Park et al. (2018); 23% in Ferree and Hall (1990); 14% in Eigenberg and Park (2016)).

In UK HE in 2019-20, 27% of UK undergraduate students were of Black, Asian or minority ethnic (BAME) backgrounds (HESA, 2021[iii]) and 35-40% of the student population in the studied modules were BAME. Thus, racially minoritised people were under-represented in the lecture slide images of the four social science modules compared to the population of students in those courses. Racially exclusive portrayals, which carry greater salience (Ferree and Hall 1990), were severely under-represented relative to both the UK undergraduate population as a whole and the student population of these courses.

As Thomas and Quinlan (2023) highlighted, cultural sensitivity of curricula involves not just representation, but positive depictions of people of colour. Their concept of positive depictions refers to representing people of colour in ways that highlight their strengths and contributions, rather than presenting them in stereotyped ways or as part of a social problem. The role analysis of actors in the images allowed us to assess how positively racially minoritised actors in the images were presented relative to white actors. Our study revealed that 40% of the actors were depicted in roles associated with 'Power', followed by 'Social problem' (22%), 'Daily life' (22%), 'Other jobs' (12%) and 'Immigrant' (3%). However, only 24% of the roles occupied by people of colour were related to 'Power', which included 'Jobs with state-sanctioned authority' (e.g. politician, police, soldier, teacher, healthcare worker) and 'Business or thought leaders' (e.g. executive board, scholar, journalist). The proportion of white roles

related to 'Power' was strikingly higher, with almost half of the total white (46%) actors in positions of power. White actors were more likely to be political, economic, and academic leaders than people of colour, whereas racially minoritised actors were more likely to be portrayed as sports players, protestors, manual workers, or immigrants.

Only about 12% of the images were deemed likely to be 'inspiring' to racially minoritised students. The set of images, which constituted a substantial proportion of students' first year curriculum, provided few opportunities for racially minoritised students to see themselves in roles to which they might aspire with a degree. As suggested by Thomas and Quinlan (2023) this absence may negatively influence racially minoritized students' engagement and success, though more research is needed to establish this specific link. Our findings build on Thomas and Quinlan (2023) by documenting cultural (in)sensitivity of curricula in visual images of racially minoritised vs white people in lecture slides. While they analysed students' ratings of the curricula overall, we documented one aspect of the curriculum in which people of colour were presented less often and less positively than white people, helping to explain why racially minoritised students perceived the curriculum as less culturally sensitive. Racially minoritised students taking these modules had fewer opportunities than their white peers to see people who look like them in positions of social power or esteem in their curriculum. Our findings from the role analyses were broadly consistent with previous research on undergraduate textbooks in various social sciences fields as summarised in the literature review (Ferree and Hall, 1990; Allan and Wallace, 2010: Eigenberg and Park, 2016; Park et al, 2018).

This study extended existing research on lecture slides by analysing slide images, treating images as a hidden curriculum that has potential differential impacts on racially minoritised students and, thus, racial inequalities. Existing literature on lecture

slide studies has typically investigated the effectiveness of different types of images for learning, whilst racial representation in lecture slide images and hidden curricula (Jackson, 1968) associated with such representations has been neglected.

We have also advanced the study of diversification of the curriculum by focusing on lecture slides. Other studies of diversification of HE curriculum have focused on reading lists (Adewumi and Mitton 2022; Adewumi et al, 2021; Borkin 2021; Schucan Bird and Pitman, 2020). We interrogated lecture slide images through a race-focused lens rooted in critical race theory and praxis.

Finally, we have innovated on the methods used in existing research on textbook imagery. We developed the concept of 'inspiring' to capture the potential liberatory effect of images on racially minoritised students. While previous studies investigated unequal representation of ethnicity or gender with concepts of positive images more narrowly defined as, for example, political participation (e.g. Allen and Wallace 2010), our coding for 'inspiring' adopted a more holistic judgment that could be used across disciplines. We also validated this relatively easy-to-use code with unique, detailed role analyses. Given similar trends within modules across all our measures, it may be possible to use this single holistic coding of 'inspiring images' as a proxy for the cultural sensitivity of images in the curriculum. We recognise that 'inspiring' is a subjective assessment by the authors and may not reflect all students' views, particularly considering intersectionality. Nonetheless, it offers a short-hand that is empirically aligned with several other, more complex codes, facilitating communication with academics and, therefore, CRT praxis.

Limitations and implications for research and practice

All visual data were collected and analysed without listening to the lectures or

interviewing teachers or students. This limitation means that we cannot comment on 'what signifies' (i.e. denotation or what lecturers intended) or potential misalignment with 'what is signified' (i.e. connotation or what students might have understood) (Barthes, 1987). Considering the impact of meaningful images on students' deep learning from a semiological perspectives (Hallewell and Lackovic 2017; Lacković and Olteanu, 2020), future research should investigate the gaps between the denotation and connotation (Barthes 1987), or internal and external narratives (Banks 2001) of image analysis that contribute to the hidden curriculum. Doing so will help understand intentional or unintentional disagreements, but also how the cultural sensitivity of images could affect student academic engagement. Specifically, a further study of students' perceptions of and reflection on lecture slide images is needed to understand how students, particularly racially minoritised students, receive, interpret and construct meaning from images and how that affects their engagement with the subject.

Our research was also limited to modules in sociological studies in a single British university. Future research and evaluation could apply our measures of representation and 'inspiring' images to other contexts, such as other disciplines where images of people are commonly used or to other universities or countries. For example, might similar patterns be observed in images in former British colonies? Teachers themselves could interrogate their own slides using these measures to reflect on and enhance their own practice. Future studies might also consider both race and gender together consistent with principles of intersectionality in CRT research.

We specifically examined just two of the six factors that describe culturally sensitive curricula, specifically *Negative Portrayals and Positive Depictions* (Quinlan et al, 2022). Further research could examine other dimensions of culturally sensitive curricula through interrogating other aspects of the curriculum. While we extended

research on diversification of curricula beyond reading lists, future research could, for example, examine classroom interactions or assessments.

Conclusion

Our study is intended to raise lecturers' and researchers' awareness of the inclusivity of images in instructional materials and their potential impact on racially minoritised students. We hope to promote critical examination of an aspect of the curriculum where structural racism can hide in plain sight. To create a more racially equitable society, lecturers could intentionally present images that do not merely reproduce the current social order but offer inspirational imagery that normalises the presence of people of colour in positive, powerful roles.

Disclosure statement

No potential conflict of interest.

References

Adewumi, B. and Mitton, L. 2022 Diversifying the social policy curriculum. *Social Policy and Society*. DOI: https://doi.org/10.1017/S1474746421000506

Adewumi, B., Bailey, L.R., Mires-Richards, E., Quinlan, K.M., et al. 2022. Cross-disciplinary, collaborative, and student-led: Developing a change process for diversifying reading lists. *London Review of Education. 20 (1), 1-17. Doi: 10.14324/LRE.20.1.01*

Allen, M. D., and Wallace, S. L. 2010. Teaching introduction to American government/politics: What we learn from the visual images in textbooks. *Journal of Political Science Education*, *6*(1), 1-18.

Baker, J. P., Goodboy, A. K., Bowman, N. D., and Wright, A. A. 2018. Does teaching with PowerPoint increase students' learning? A meta-analysis. *Computers and Education*, *126*, 376-387.

Banks, M. 2001. *Visual Methods in Social Research*. London: Sage.

Baro, A., and Eigenberg, H. 1993. Images of gender: A content analysis of photographs in introductory criminology and criminal justice textbooks. *Women and Criminal Justice*, *5*(1), 3-36.

Barthes, R. 2000. *Mythologies*. London: Vintage Classics.

Bartsch, R. A., and Cobern, K. M. 2003. Effectiveness of PowerPoint presentations in lectures. *Computers and education*, *41*(1), 77-86.

Bell, P. 2001. *Handbook of Visual Analysis.* in T. van Leeuwen and C Jewitt. Sage

Bloom, B. S. 1972. Innocence in education. *School Review*, *80*, 333–352.

Braun, V., and Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Buckner, E., Lumb, P., Jafarova, Z., Kang, P., Marroquin, A., & Zhang, Y. (2021). Diversity without Race: How University Internationalization Strategies Discuss International Students. *Journal of International Students,* 11, 32-49.

Chen, J., and Lin, T. F. 2008. Does downloading powerpoint slides before the lecture lead to better student achievement?. *International Review of Economics Education*, *7*(2), 9-18.

Chisholm, L. 2018. Representations of class, race, and gender in textbooks. *The Palgrave handbook of textbook studies*, 225-237.

Cosgun Ögeyik, M. 2017. The effectiveness of PowerPoint presentation and conventional lecture on pedagogical content knowledge attainment. *Innovations in education and teaching international*, *54*(5), 503-510.

Cotton, D., Winter, J. and Bailey, I. 2012 Researching the hidden curriculum: intentional and unintentional messages. *Journal of Geography in Higher Education*. 37 (2), 192-203.

Dale-Rivas, H. 2019. *Report 120 The White Elephant in the Room: Ideas for Reducing Racial Inequalities in Higher Education*. [Online]. Oxford, UK. Available at: https://www.hepi.ac.uk/wp-content/uploads/2019/09/The-white-elephant-in-the-room-ideas-for-reducing-racial-inequalities-in-higher-education.pdf.

Douglas, T.-R. M., Shockley, K. G., and Toldson, I. (Eds.). 2020. *Campus uprisings: How student activists and collegiate leaders resist racism and create hope.* New York: Teacher College Press.

Eigenberg, H. M., and min Park, S. 2016. Marginalization and invisibility of women of color: A content analysis of race and gender images in introductory criminal justice and criminology texts. *Race and Justice*, *6*(3), 257-279.

Ferree, M. M., and Hall, E. J. 1990. Visual images of American society: Gender and race in introductory sociology textbooks. *Gender and Society*, *4*(4), 500-533.

Fildes, K.J. *et al.* 2021. The first steps on the journey towards curriculum reconciliation in science, medicine and health education. *Higher Education Research and Development,* 40:194–206.

Hall, R., Ansley, L., Connolly, P., Loonat, S., Patel, K., & Whitham, B. (2021). Struggling for the anti-racist university: learning from an institution-wide response to curriculum decolonisation. *Teaching in Higher Education*, *26*(7-8), 902-919.

Hall, S. 1997. The work of representation. *Representation: Cultural representations and signifying practices*, *2*, 13-74.

Hallewell, M. J., and Lackovic, N. 2017. Do pictures 'tell' a thousand words in lectures? How lecturers vocalise photographs in their presentations. *Higher Education Research and Development*, *36*(6), 1166-1180.

Harper, S. 2012. "Race without racism: How higher education researchers minimise racist institutional norms." *The Review of Higher Education* [Online] 36: 9–29. Available at: https://rossierapps.usc.edu/facultydirectory/publications/231/Harper (2012) RHE.pdf.

Jackson, P. W. 1968. *Life in classrooms*. Teachers College Press.

Krippendorff, K. 2012. *Content analysis: An introduction to its methodology*. Thousand Oaks, CA: Sage.

Lacković, N., and Olteanu, A. 2020. Rethinking educational theory and practice in times of visual media: Learning as image-concept integration. *Educational Philosophy and Theory*, 1-16.

Ladson-Billings, G. 1995. "Towards a theory of culturally relevant pedagogy." *American Education Research Journal* 32: 465–91.

Ladson-Billings, G., and W. F. Tate. 1995. "Toward a Critical Race Theory of education." *Teachers College Record* 97 (1): 47–68.

Ledesma, M.C. and Calderón, D. 2015. Critical Race Theory in education: A review of past literature and a look to the future, *Qualitative Inquiry*, 21(3):206-222 DOI: 10.1177/1077800414557825Levasseur, D. G., and Kanan Sawyer, J. 2006. Pedagogy meets PowerPoint: A research review of the effects of computer-generated slides in the classroom. *The Review of Communication*, *6*(1-2), 101-123.

Li, Y. 2018. Unequal returns: higher education and access to the salariat by ethnic groups in the UK. In J. Arday & H.S. Mirza's (Eds) *Dismantling Race in Higher Education* (pp. 103-124).

Love, S. R., and Park, S. M. 2013. Images of gender twenty years later: A content analysis of images in introductory criminal justice and criminology textbooks. *Feminist Criminology*, *8*(4), 320-340.

Meda, L. 2020. Decolonising the curriculum: Students' Perspectives. *Africa Education Review* 17(2), 88-10

Mheta, G., Nyangu Lungu, B. and Govender, T. 2018. Decolonisation of the curriculum: A case study of the Durban University of Technology in South Africa. *South African Journal of Education* 38 (4)

Mountford-Zimdars, A. *et al.* 2015. Causes of Differences in Student Outcomes. *Higher Education Funding Council for England (HEFCE)* [Online]:132. Available at: http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/Causes,of,differences,in,student,outcomes/HEFCE2015_diffout.pdf.

Office for Students, (19 February, 2020). The National Student Survey: Consistency, Controversy and Change. https://www.officeforstudents.org.uk/publications/the-national-student-survey-consistency-controversy-and-change/

Osei-Kofi, N., and Torres, L. E. (2015). College admissions viewbooks and the grammar of gender, race, and STEM. *Cultural Studies of Science Education,* 10, 527-544.

Park, S. M., Kim, J. L., Park, H., Kim, Y., and Cuadrado, M. 2018. Social constructions of racial images in introductory criminal justice and criminology textbooks: a content analysis. *Race Ethnicity and Education*, 1-14.

Peirce, C. S. 2000. *Philosophy of Signs*.

Peters, M. A. 2018. Why is my curriculum white? A brief genealogy of resistance. In J. Arday and H. S. Mirza (Eds.), *Dismantling race in higher education: Racism, whiteness and decolonising the academy* (pp. 253–270). London: Palgrave Macmillan.

Quinlan, K. M., Haider, M.A., Thomas, D.S.P., Annette Hayton, A., Astley, J., West, D., Turner, I., Blackwood, L., Duffin, M., Fatmata Daramy, F., Husbands, D., Kay, H., Walsh, C., Mosoeunyane, M. (2022). *How Culturally Sensitive is our Curriculum? Results of a Multi-institutional NERUPI Study*. NERUPI Report. https://kar.kent.ac.uk/id/eprint/99494

Rapley, T. 2011. "Some Pragmatics of Data Analysis." In *Qualitative Research Practice*, edited by D. Silverman, 273–290. London: Sage.

Raver, S. A., and Maydosz, A. S. 2010. Impact of the provision and timing of instructor-provided notes on university students' learning. *Active Learning in Higher Education*, *11*(3), 189-200.

Richardson, J. T. E., Mittelmeier, J. and Rienties, B. 2020. The role of gender, social class and ethnicity in participation and academic attainment in UK higher education: an update, *Oxford Review of Education*, 46:3, 346-362

Roberts, D. 2018. Active learning precursors in multidisciplinary large lectures: A longitudinal trial on the effect of imagery in higher education lectures. *College Teaching*, *66*(4), 199-210.

Roberts, D. 2019. Higher education lectures: From passive to active learning via imagery?. *Active Learning in Higher Education*, *20*(1), 63-77.

Silverman, D. 2011. *Interpreting qualitative data*. London, England: Sage

Strauss, A. L. 1987. *Qualitative Analysis for Social Scientists*. Cambridge: Cambridge University Press

Strauss, J., Corrigan, H., and Hofacker, C. F. 2011. Optimizing student learning: Examining the use of presentation slides. *Marketing Education Review*, *21*(2), 151-162.

Tangen, J. M., Constable, M. D., Durrant, E., Teeter, C., Beston, B. R., and Kim, J. A. 2011. The role of interest and images in slideware presentations. *Computers and Education*, *56*(3), 865-872.

Thomas, D. and Jivraj, S., 2020. *Towards Decolonising the University: A kaleidoscope for empowered action*. Counterpress.

Thomas, D. S. P. & Quinlan, K. M. 2023. Reimagining curricula: Effects of cultural (in)sensitivity of curricula on racially minoritised students' engagement. *Studies in Higher Education*, 48 (2). https://doi.org/10.1080/03075079.2022.2134332

Weatherly, J. N., Grabe, M., and Arthur, E. I. 2003. Providing introductory psychology students access to lecture slides via Blackboard 5: A negative impact on performance. *Journal of Educational Technology Systems*, *31*(4), 463-474.

Woyshner, C., and Schocker, J. B. 2015. Cultural parallax and content analysis: Images of Black women in high school history textbooks. *Theory and Research in Social Education*, *43*(4), 441-468.

Table 1. Thematic analysis results at three coding stages

Table 2. Thematic coding results by ethnicity

Table 3. Inspiring images of PoC with role description

Table 4. People of colour (PoC) exclusiveness and inclusion, and Inspiring images by modules

Figure 1. Thematic coding results by race

[i] We use the term 'minoritised' to denote social processes of power that lead to exclusion and discrimination of groups of people according to their physical characteristics, regardless of whether these groups are numerically in the minority locally or globally. In England, Black (of African- or African-Caribbean ancestry) and Asian (East Asian or South East Asian ancestry) individuals are in both a numerical minority locally and are racially minoritised relative to white (of European ancestry) individuals.

[ii] For this study, figures were re-calculated based on the data presented in the articles (i.e. total numbers of images, individuals, depictions) for comparison purposes.

[iii] https://www.hesa.ac.uk/news/09-02-2021/he-student-data-201920