A critical review of recent economics pedagogy literature, 2022–2023

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ABSTRACT

This paper reviews pedagogy journal articles relevant to teaching, learning and assessment in economics, and the outcomes of an economics higher education, published in the 2022 and 2023 calendar years. The paper highlights key papers published and themes of the pedagogical literature most likely to be of interest to economics academics, rather than offering an exhaustive survey of literature produced in the two-year period. As such, the paper can be considered a follow-up to an earlier paper published in 2023 in the International Review of Economics Education. As in the earlier review, articles continue to be published that utilise the natural experiment provided by the changes in teaching and assessment methods associated with the COVID pandemic, to offer lessons on a range of topics associated with teaching methods and assessment design. Post-pandemic, we see an increased concern regarding the impact of the pandemic on graduate employment outcomes. Research has continued on diversity and inclusivity issues, with research emerging on dimensions of diversity beyond gender, with greater attention paid to awarding gaps and how these can be reduced. The theme of effectively incorporating games and experiments in teaching has continued. Meanwhile, more research has emerged, providing advice on incorporating coding into economics teaching.

1. Introduction

We build on a previous survey of economics pedagogical literature (Birdi et al. 2023) whose remit was confined to papers published in the calendar years 2020–2021. The current survey updates Birdi et al. (2023) through surveying papers published in 2022 and 2023. We intend to write a series of papers providing biennial surveys of the literature, and as such the next paper would review articles published in 2024 and 2025. Our focus remains the same, namely to provide a broad scoping review of published research in academic

journals in areas related to the teaching, learning and assessment of economics, and outcomes of an economics higher education. We aim to provide an overview of research questions, debates and methodologies that have emerged during the review period and may be of interest to academic staff engaged in similar research or hoping to begin working in economics pedagogy. Through these biennial surveys we provide a map of persistent and changing concerns as the practice of teaching and learning economics grapples with new technologies and events such as Covid 19 and the emergence of generative AI.

As with the previous review paper, the current analysis is not a systematic review, by which we mean that it does not seek to produce a comprehensive overview of a body of work in answer to a clearly defined research question with a view to assessing objectively the validity of findings and giving a clear sense of the state of knowledge in the area. We undertake what is more akin to a mixture of a scoping review and a mapping review as defined by Grant and Booth (2009). That is to say, we characterise the range and quality of literature, examine methodological approaches and identify the nature and extent of research evidence in the area of economics pedagogy. We also look at emerging evidence, particularly in areas where questions are unclear. We summarise findings, identifying fruitful gaps and areas of research for the future.

Authors of this review are involved in the Economics Network, a national UK body that promotes excellence in economics pedagogy and assessment through conferences, research and training. As trainers, we are interested in papers whose lessons can be generalised and used productively by others. We therefore exclude papers that are very specific to a particular setting or topic, which might nevertheless be interesting, but not directly relevant for use in our online Handbooks or training. The papers we have chosen are those we would recommend to practitioners and those wanting to do further scholarship or research.

In Sections 2 and 3, we outline our approach to selecting papers to review, the themes of the papers discussed, and methodological considerations. Then in Section 4 onwards, we discuss recent pedagogy literature relevant to economics, organised into the themes of module content; assessment; diversity and inclusion; awarding gaps and employability. Conclusions and areas for suggested future research are highlighted in Section 9.

2. Approach

As in Birdi et al. (2023), our analysis began by considering the main journals that publish peer-reviewed articles in economics pedagogy, namely the *International Review of Economics* Education (IREE) and the Journal of Economic Education (JEE). We then broadened the scope of our analysis to include certain journals of general education and related fields where they contain papers of interest to economics educators. For this review paper, we also added some economics-discipline research journals where they include papers relating to the education of economics. The list of journals was extended to identify journals that may consider the supervision of doctoral students in economics, inspired by the Royal Economic Society ESRC funded programme for doctoral students. The full list of journals searched for this review are shown in Table 1 below.

Since our primary focus was on the two main journals noted above (IREE and JEE), we began with an initial indexation of all papers published in these two journals within the years 2022 and 2023, then categorising papers based initially on the categories we had used in our previous paper, Birdi et al. (2023). These are listed in the first column of Table 2 below. The authorship team then read these papers and refined these categories in group discussion, adding new categories and deleting old ones as necessary to reflect continuing or new areas of interest that emerged from our search.

At this stage, many papers were dropped from our consideration if they did not fulfil our selection criteria, namely, that the papers:

- could be generalised and used by others in their own teaching practice, and therefore provided a potential source or reference for training of staff; or
- contained work that was illustrative and exemplary of high-quality scholarly work that would be useful to those new to such work; or

Table 1
Journals Used in Initial Paper Selection.

Assessment & Evaluation in Higher Education
British Educational Research Journal
Higher Education
Higher Education Quarterly
Journal of Higher Education
Research into Higher Education
Studies in Higher Education
*International Journal of Doctoral Studies**
*Journal of Statistics and Data Science Education**
International Review of Economics Education
Journal of Economic Education
Journal of Economics Teaching
American Economic Review Papers and Proceedings*
Journal of Economic Behavior and Organization*
Eastern Economic Journal*
Bold denotes an economics-specific journal.
An asterisk denotes a journal not considered in Birdi et al. (2023).

Table 2
Themes in Economics Pedagogy Literature.

Themes 2020-2021	Themes 2022-2023
Methodology in education	*Methodology in education*
Classroom practice	Classroom practice
Module design	Module design
Teaching, learning and assessing during Covid	Assessment, integrity, performance
Diversity (emphasis on gender)	Diversity (gender and beyond)
Wellbeing	Resilience, transition, anxiety
	Skills and employability
Italics denote a topic prevalent mainly in the general economics literature	

- had some clear value in terms of contribution to existing, or the development of new, topical areas of pedagogical interest in economics.

With regard to the other journals in this survey, the authors used a similar approach though only considered for inclusion those papers whose subject matter resonated with the categories and topics that had been identified above. For example, Alin et al. (2023) which is concerned with integrity within proctored examinations, and Quinlan and Corbin (2023) which looks at how the curriculum influences career choices. We also considered papers whose sample for analysis was drawn in large part from economics students or staff.

It is noteworthy that many of the key themes discussed in the previous survey of Birdi et al. (2023) are still prevalent among researchers in economics pedagogy. These themes are outlined in Table 2 below. The interest in classroom practice remains but we detect an increased interest in the use of classroom games beyond their traditional use in microeconomics subjects. Within the persisting theme of module design we discern an interest in experiential learning, as well as in distilling the lessons from the experience of teaching during the COVID-19 pandemic. We find there is an increasing interest in issues related to assessment, partly related to integrity concerns but also in the economics of nudging towards improved performance. There remains a keen interest in diversity and the impact on, and performance of, various demographic groups. However, while the dominant characteristic considered in studies reviewed in Birdi et al. (2023) was gender, there is now a clear shift towards the impact on other groups, for example as characterised by ethnicity. The theme of wellbeing also persists with a more nuanced emphasis on resilience and anxiety. Finally, there is a notable rise in papers directly concerned with employability and skills. Some of these themes were perhaps crowded out in papers published in 2020–2021 by the specific concerns around teaching and assessing during the Covid pandemic.

We initially began with 137 papers published in the journals listed in Table 1 which we thought may be relevant for this survey. Papers were then organised according to key themes identified, as listed in Table 2. Finally, papers selected for inclusion were those deemed those likely to be of particular interest to economics academics, and in line with the key themes identified in Table 2. This narrowed the sample to 63 papers.[1] Maybe not surprisingly most of the papers finally selected for this review are still being published in the two main pedagogy journals in the economics field, namely the *International Review of Economics Education* and the *Journal of Economic Education* (as shown in Fig. 1). However, the general education journal, *Studies in Higher Education*, is becoming an increasingly important reference point for economics educators, alongside several other general education journals.

Most papers considered in this review (over 80 %) had authors based in the US or UK, or had international authorship teams. Appendix 1 provides a table indicating key articles selected for review under the themes highlighted in Table 2.

2.1. Educational research and economics: methodological considerations

Birdi et al. (2023) discussed the multi-disciplinary nature of pedagogic research, which often uses methods different to the standard treatment effects, experimental approach to teaching interventions familiar to economics researchers. It was noted that in the educational literature, a variety of quantitative methods (for example, principal components analysis); qualitative methods (for example, template analysis) and mixed methods are routinely used in educational settings.

Many papers published in economics education over the study period 2022–2023 did use some econometric analysis, with some using causal analysis (for example, Halim et al. 2022; Ho et al. 2023; Martinez, 2023; Taback and Gibbs, 2023). These papers tended to concentrate on cases with large sample availability such as first-year economics courses, or the use of large-scale institutional management data. Taback and Gibbs (2023, p.135), despite their experimental study, note that it is often "neither practical nor ethical to randomly assign students to treatment or control groups" and this can limit the applicability of standard identification approaches in education studies.

As noted in Section 1, we are often interested in papers that have applications in the classroom (including the virtual classroom), and there remains a valid discussion to be had about appropriate methodologies that give rise to practical conclusions. The relevant issues revolve around the possibility of designing quasi-experimental studies in education (for example, for ethical reasons and/or to ensure sufficient sample sizes) and the problems of external validity and effect size. Interested readers should consult Lortie-Forgues and Inglis (2019) and Thomas (2020) for an introduction to the issues.

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[1] There are more than 64 references in the final references list, but this is because additional earlier papers are often cited to provide context.
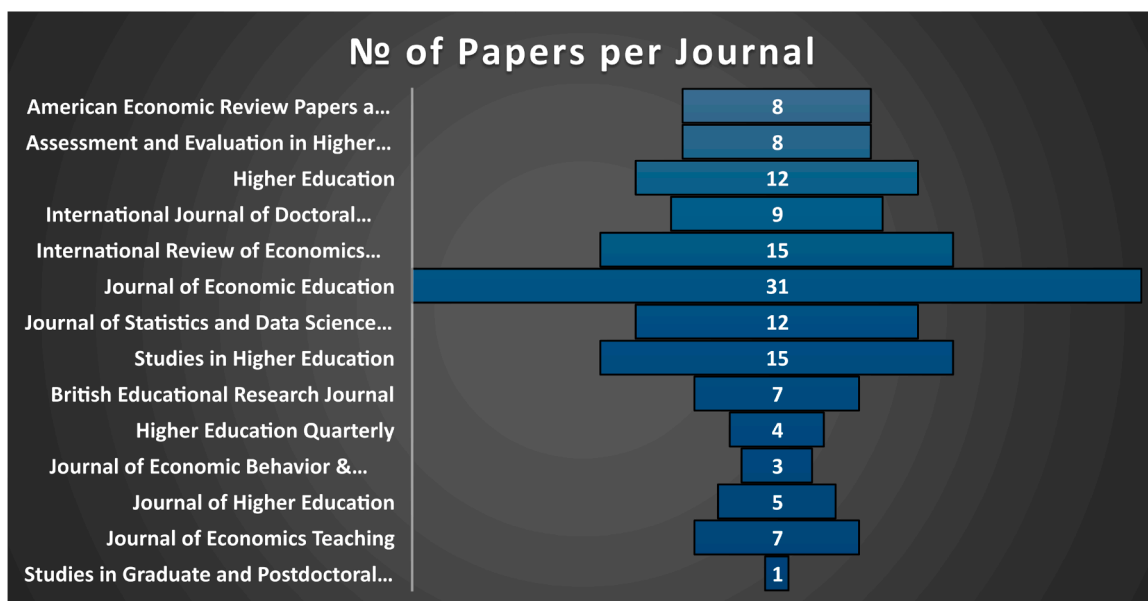
Fig. 1. Journals and Paper Counts.

Methodological issues discussed in the general educational literature remain of interest to those working in economics. Nieminen et al. (2022) discuss the absence of a connection between much work on assessment practices, which emphasises assessment as objective measurement, and educational theories that discuss the broader learning impacts of assessment. As such, they suggest that many studies do not give a clear steer on how to improve and change assessment design to achieve educational outcomes that may entail more than conceptual understanding.

2.2. Module content

Birdi et al. (2023) highlight papers that provide suggestions for teaching session content. Below, we update that analysis. Birdi et al. (2023) also indicate that an increasing number of papers go beyond consideration of how to teach specific topics to discussing module design, suggesting that future literature could consider programme design too. Unfortunately, limited further literature on module and programme design has emerged since. Exceptions are Burnham et al. (2023) and Tackett (2023), as discussed below. However, note that while Burnham et al. (2023) describe the development of a statistics module and Tackett (2023) discusses three principles that should underpin the design of undergraduate regression modules (namely engaging with data; developing computational skills; and developing non-technical, especially communication and teamwork, skills), these analyses do not focus specifically on modules for economics students. Similarly, Taback and Gibbs (2023) describe an experiment to investigate the impact of a nudge on students' attitudes towards statistics, but the focus is not specifically on economics students. They randomly assigned students to either a treatment group, who received a personalised e-mail, including links to real-world applications of statistics (for example through news articles, blog posts and videos). The control group was instead sent a generic "course" e-mail. While the treatment group were more likely to open their e-mail, no association between the treatment and student attitudes towards statistics was found.

Although little further literature has emerged on module or programme design, not surprisingly – in light of the pandemic and the (in some cases enforced) move to online teaching and assessment – there has been considerable reflection on how teaching and assessment has developed since the pandemic, and in particular the movements between in-person and online, synchronous and asynchronous teaching and assessments. The *Journal of Economic Education* (Volume 54, Issue 2) includes a symposium on these issues, but also see Burnham et al. (2023) on the development of an online introductory statistics module. Greater attention has also been given to opportunities for experiential learning. Ong and Wong (2023) discuss student field trips to poorer areas that provide students with urban and labour economics insights, while Ong (2023) describes how student-led interviews can again provide students with greater understanding of labour economic issues.

Nevertheless, trends can still be identified in the literature on teaching specific economics content. Maybe most notably, and possibly unsurprisingly, there is a developing literature providing suggestions on incorporating the use of coding software R and Python into aspects of economics teaching. Tucker et al. (2023) discuss the use of R and the development of an interactive online text incorporating programming in R in statistics teaching. In discussing the key principles in the design of an undergraduate regression

module, Tackett (2023) again focuses on a module that incorporates the use of R. Kuroko (2023) discusses how undergraduate students can develop their data handling and regression skills using R or Python, with added motivation for students stemming from competing in a Kaggle competition.[2] Keefer (2023) focuses more specifically on developing student understanding of omitted variables and the use of instrumental variables in regression analysis teaching. A number of papers discuss the use of Python, and in a range of economics contexts. Jenkins (2022) suggests how Python can be used in an undergraduate macroeconomics module. Kuroko (2021) had previously discussed the use of Python in a microeconomics module, and Luedtke (2023) more specifically demonstrates how Python can be used to provide insights into the Nash equilibrium concept. The increased interest in the use of coding/programming aligns with areas where additional provision in undergraduate delivery has been identified as beneficial by professional economists, see Anand et al. (2024), a follow-up to Anand et al. (2019). While this is apparent in the 'economics' studies of Keefer (2023), Kuroko (2021) and Luedtke (2023), it is also apparent in the 'statistics' research of Tackett (2023) and Tucker et al. (2023), with Tackett (2023) also picking up on a further area identified as warranting greater attention, namely communication skills.

Birdi et al. (2023) highlight the longstanding theme in the economics pedagogy literature on how to incorporate games and experiments effectively in economics teaching sessions. This dates back at least to a 1970 *Journal of Economic Education* symposium (Volume 1, Issue 2) on the use of games and simulations in economics teaching. A burgeoning literature has emerged, with key contributions in the *Journal of Economic Perspectives* in 1996 including Anderson and Holt (1996); Holt (1996); Holt and Anderson (1996). Nevertheless, for anyone considering using online games / experiments for the first time, a particularly valuable paper is Atwood et al. (2023) as the authors provide an overview of the key online experimental platforms available, namely MobLab, classEx and VeconLab. In addition, in 2023, the *Journal of Economic Education* again published a symposium on classroom games and experiments (Volume 54, Issue 2). A feature of this symposium is the multiple papers that each describe a game that provides insights into sustainability concerns. Santa (2023) suggests a dynamic game in which students develop country strategies where cooperation can mitigate climate change. Cortés et al. (2023) describe a dynamic fisheries game that students play to develop their understanding of resource rivalry, while Jacobson (2023) discusses a two-period mining game.

Birdi et al. (2023) also highlight an increasing number of papers that describe games and experiments that can be played by students to understand macroeconomics rather than microeconomics content. This trend continues: Zhu and Zhang (2023) discuss the use of a cryptocurrency game that can be incorporated into undergraduate macroeconomic principles with microeconomics foundations teaching. Meanwhile, for more advanced economics students, Davis and Gómez-Ramírez (2022) develop a dynamic extension of the static Carlin and Soskice (2005) macroeconomic model, including a simulation workbook tool. Again, aimed at more advance macroeconomic students, Majd and Page-Hoongrajok (2023) put forward a simulation in which students mimic credit ratings agency analysts to develop their understanding of different countries' sovereign credit risk. Further papers provide guidance on how to teach macroeconomics concepts and theories effectively, for example Waters (2022) and Arnold (2023) focus on diagrammatic expositions of macroeconomic analyses, while Milani (2023) and Neumuller (2023) put forward applications / extensions to the Solow growth model.

As well as literature on the use of games and experiments in economics teaching, some analyses instead focus on how to teach game theory topics effectively. In addition to the analysis of Luedtke (2023) mentioned above, Geerling et al. (2023) describe how clips from the recent popular television series Squid Game can be used to teach game theory, while Eggleston (2023) provides suggestions specifically on how to teach the mixed-strategy Nash equilibrium concept.

2.3. Assessment and feedback

Not surprisingly, as well as a growing literature on module content, published economics pedagogy papers also consider the design of assessment. The use of writing as a learning tool is explored in Ayadi and Onodipe (2023); Freitas (2023) and Whittard et al. (2022). The use of writing to support learning and the development of critical thinking skills is considered by Ayadi and Onodipe (2023). In contrast to traditional high-stakes assessment, writing is considered for low-stakes assessments in the form of note-taking exercises undertaken in class. A clear link to the Assessment for Learning literature can be made. Freitas (2023) similarly considers low-stakes content-based writing exercises to improve test performance. While McKee and Orlov (2023) propose multiple choice questions (MCQs) as a means of assessing economics knowledge, Freitas (2023) notes benefits of writing exercises beyond use of analogous MCQ exercises arising from the 'content-based' element of the approach.[3] The use of the one-minute paper (OMP), in which reflection is undertaken in a short space of time, is championed in Whittard *et al.* (2023), with the authors not only highlighting multiple benefits of this approach, but also the potential for adopting it in online settings.

Alternatively, Depro and Rouse (2022) discuss a significant change to a final-year capstone research project module. Students were required to combine traditional research-based learning, along with key deliverables, linked to activities they could experience within the workplace. These included providing memos relating to the data, research methods and initial findings; a final written report; and an oral presentation. This integrated approach illustrates authentic assessment, designed to improve employability preparation alongside the development of independent research skills. Beyond the economics pedagogy literature, Bearman et al. (2023) and Nieminen et al. (2023) both explore methods of digital assessment, with Nieminen et al. (2023) focusing specifically on reviewing

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[2] Kaggle https://www.kaggle.com/ introduces students to machine learning and data science, providing datasets, coding examples and competition opportunities.

[3] Note that Bond et al. (2013) and Orlov et al. (2021) highlight that MCQs are associated with gender effects, while Bush (2001) and Bond et al. (2013) indicate the inability of some types of MCQs to reward student partial knowledge.

literature on digital methods of authentic assessment. Scope for improvement in preparing students for the digital world is identified.

Other methods for improving student assessment performance are also put forward in the literature. Espey (2022) highlights the importance of student involvement in small group-based exercises. Bächtold et al. (2023) use survey data to evaluate first-year students' attitudes towards group-work. While anecdotally, students may appear reluctant to engage in group-work, the authors find that only 22 % of students reported as being reluctant to engage in group-work, and that this reluctance is related to prior beliefs about the learning gains from such activities, as well as shaped by students' prior group-work experiences. These results provide a motivation to improve student preparation for group-work, by actively helping students to understand the positive learning gains that are possible from such activities.

Espey (2022) also emphasises increased effort for improving individual examination performance. Martinez (2023) notes the improved performance resulting from better studying approaches in a similarly quantitative analysis of economics students. Quantitative analysis demonstrating the student performance benefits of repeated quizzes of core mathematics concepts for studying economics is provided by Leggett et al. (2022), who note that quizzes close in date to summative examinations are helpful as students have less chance to forget material learnt.

The advantages and disadvantages for the COVID-prompted pivot to online assessment are considered in Slack and Priestley (2023). The analysis is supported by the use of a mixed methods approach (focus groups and quantitative analysis). The benefits (for example, inclusivity) and disadvantages (for example, increased workload) of online approaches are noted, with a call for support for online approaches made in the form of scaffolding and integration. In related work, Tai et al. (2023) consider arrangements and accommodations for inclusion in examinations and other high-stakes assessments. They suggest that the move to online assessment prompted by the pandemic helped inclusivity via online examinations; the use of technology and students' ability to take assessments in familiar surroundings without judgment. Maybe inevitably, with greater use of online assessments, the issue of academic integrity needs to be addressed. The nature of cheating in virtual, proctored examinations is explored by Alin et al. (2023). Eight forms of cheating and three forms of mitigation that can be employed in response are identified.

The promotion of student engagement with feedback is examined by Patel and Roush (2023). Quantitative analysis is provided to illustrate the benefits arising from the use of emoticons. Going beyond the provision of information on relative performance to include emoticons is shown to have potential to improve attendance and performance. It is noted that nudges fail to improve performance, in contrast to emoticons, with Nicholls (2023) similarly finding that nudges have a disappointing impact on procrastination. An alternative approach to addressing engagement with feedback is offered by Wood (2023) where the use of screencasts is championed, with opportunities to request and initiate feedback. Both papers not only consider how to provide feedback, but how to ensure student engagement with assessment feedback. Meanwhile, Jensen et al. (2023) provide a framework or categorisation for collating feedback opportunities: elicited (sought by students); formal (planned by staff) or incidental (neither).

2.4. Diversity and inclusion

Ahlstrom et al. (2023) provide a useful overview of the state and methods of teaching economics in the US. It is based on the 2020 sample of the quinquennial surveys conducted in the US instigated by Becker and Watts (1996, 2001). They note that "the increased professional emphasis placed by the American Economic Association on building a more diverse, inclusive, and productive profession (AEA, 2020) may be our best hope for breaking the 'tradition' of chalk and talk methods in undergraduate economics instruction". As illustrated below in this section, and as previously highlighted in Birdi et al. (2023), diversity is of keen interest among researchers in economics pedagogy. While in Birdi et al. (2023) most of the published work focuses on gender rather than racial or other characteristics, there now seems to be some increased interest in broader aspects of diversity.

Also focused on US economics education, Siegfried (2023) looks at trends in the student population studying economics. Student numbers are stagnant from 2010 to 2013, with a 12 % increase from 2013 to 2015 when there is some stabilisation until 2018, followed by an accelerating decline over the next four years such that student numbers revert to their 2015 levels. The share of female students peaked at 35 % in 2003, remaining in the 31–34 % range for the next two decades. There is a notable gender difference between economics majors at public (29 %) and private institutions (37 %), with the percentage of female students slightly higher in US Masters and PhD programmes. Halim et al. (2022) examine whether nudges might be used to encourage more women to choose to study economics. They discuss the effects on the selection of economics courses by nudging students with information about the benefits (financial and personal) of studying economics. Their experimental design shows that the positive effect of nudging is found only among men and has no effect on women's choices.

Berik and Rodgers (2023) provide a discursive account of the "engendering" of a development economics module. They provide a detailed discussion of the integration of gender in a systematic way across the module using scholarly articles, classroom activities and assignments that can complement standard textbooks. They argue that a gender-aware development course should highlight how development processes differentially affect women and men, and how gender inequality at the household or market level affects country performance and well-being. Small (2023), in a similar vein, examines the production of an "alternative" history of economic thought module which incorporates diversity throughout.

From the non-economics literature, Tai *et al.* (2022) study interviews with students to understand the impact assessment types, in particular examinations, can have on module choices of students with disabilities. Their analysis looks at examination avoidance by certain groups of students, which provides an insight into the potential exclusionary effects that examinations can have where other choices are available to students. They suggest more attention be placed on assessment design than on mitigations and adjustments. Given the prevalence of examinations in economics, this study may be of particular interest to economics educators. However, interesting work and an alternative perspective is provided by MacArthur and Santo (2023). The complexity of the

performance-anxiety and performance-attitude relationships are explored. A key issue is that high anxiety may aid performance, with this leading to a suggestion that efforts should not always be made to avoid student anxiety. This work on anxiety can be linked to the study-support analysis of Cannonier and Burke (2023) which provides a quantitative analysis, with a large sample of 900 students, of the effects of test-taking aids (notes on a single side of paper) and anxiety on test performance. Both individually-prepared and group-prepared test aids are considered. Anxiety is here found to reduce student performance. Meanwhile, test aids improve performance, beyond just reducing anxiety.

Brown-Robertson and Nichols (2023) find that the effect of mentors and peer learning assistants in closing achievement gaps in a historically black institution is positive on black students. The assistants received intensive training, and examining the question of training in these kinds of support arrangements would be an interesting area for further work. Dogucu et al. (2023), based in data science rather than economics education, suggest a framework of interventions around module materials, assessment types and delivery methods that might be more inclusive across racial groups and students with disabilities. Although not an evaluative study, it provides avenues for researchers to consider interventions that may increase equity across diverse groups of students.

2.5. Awarding gaps

Alongside a growing awareness of the importance of encouraging greater student diversity and supporting diverse economics student cohorts, there is increasing concern about awarding gaps, i.e. some groups of students persistently appear to perform less well in their economics studies (Advance, 2023). Recent publications exploring the impact of learning design for student outcomes also offer suggestions that may be considered to help reduce awarding gaps.

Boulatoff and Cyrus (2022) explore the challenges associated with large introductory university modules, specifically Principles of Economics modules at Dalhousie University. They highlight the challenges associated with large classes often leading to issues such as absenteeism, high failure rates and reduced learning outcomes. The authors aimed to redesign their Principles of Economics modules to improve learning outcomes for different types of learners: collaborative, dependent and independent. The study involved introducing three key changes: mandatory tutorials with active learning; consistency in instructors; and the use of online quizzes throughout the term. Data were collected through surveys administered to students before and after the intervention. The surveys included questions about demographics, lecture and tutorial attendance, and self-reported learning outcomes. Results showed that the intervention had a positive effect on student performance and self-reported learning. The most significant impact on student performance was via greater tutorial attendance, particularly for students at the lower end of the grade distribution. Lecture attendance also improved performance, but its impact was reduced after the intervention. Greater consistency of instructors and the use of online quizzes were also beneficial.

Olitsky and Cosgrove (2022) use experimental methods to evaluate the impact of loss aversion on student motivation. The experiment effectively embeds a concept that students learn about during undergraduate economics degrees and provides an opportunity to evaluate whether a form of loss aversion affects students' learning gains. The authors randomly separated students into a treatment group, and a control group. At the beginning of the teaching term, the treatment group could see a mark of 100 for each assessment to be set, and completion of each assessment would reduce the mark; this meant that the average mark effectively fell, as students completed assignments. Conversely, the control group would see their average only constructed based on the assignments completed. Their results suggest that the treatment group perform significantly better in their examinations than the control group. The effect of loss aversion seems to be more prevalent amongst lower attaining students based on their prior assessment.

Demirtaş and Türk (2022) investigate the impact of asynchronous and synchronous teaching methods on student performance in a microeconomics module during the COVID pandemic. They make use of the rapid change of teaching practice during the pandemic to compare the effects of asynchronous (pre-recorded lectures) and synchronous (live online lectures) methods on student performance. Students were divided into two groups: a synchronous group who attended live lectures via Zoom and an asynchronous group who accessed recorded lectures at their convenience. Both groups were taught the same material and took the same multiple-choice test at the end of each week. The experiment included 138 students from engineering and social sciences backgrounds. The results showed that the asynchronous group performed significantly better than the synchronous group, scoring 18 % higher on average. The analysis by gender revealed no significant differences between male and female students in either group. The findings suggest that asynchronous learning may offer advantages in terms of flexibility and accessibility, particularly during crises like the pandemic. There remains an area for future research to see whether this remains true post-pandemic.

Cagliesi et al. (2023) similarly use econometric methods and the natural experiment opportunity associated with the pandemic, but rather than considering the change in teaching methods, focus on the move to online assessment and its impact on student performance. While the data are collected from business and management students, there are lessons for economics educators on assessment design. The paper directly addresses the impact of the change in assessment methods on awarding gaps, concluding that the assessment changes adopted reduced the international student awarding gap.

2.6. Employability

Several papers published in the survey period consider the role of higher education in supporting careers development and enhancing employability, as well as the paper by Depro and Rouse (2022) discussed above. Messages from this literature range from guidance on the structure of employability preparation, to the impact of higher education on employment intentions. Aničić et al. (2023); Ho et al. (2023); Thompson et al. (2023); and Tomlinson et al. (2023) all consider employability initiatives with possible impacts for economics students, again during and after the COVID pandemic. Various aspects of employability, career development,

and the effects of external factors on graduates' career prospects are explored within different scales of intervention: department, faculty and university initiatives. The different settings lead to similar outcomes of interest, partly driven by the context during the pandemic and partly by the global institutional focus on employability skills development. All four papers emphasise the significance of generic and digital competences for employability. These include skills such as critical thinking; problem-solving; communication; teamwork and digital literacy. Secondly, the papers discuss how external factors, such as economic recessions and the pandemic, affect graduates' career prospects, employability and periods of unemployment or underemployment. They highlight the need for resilience and adaptability in navigating these challenges. Thirdly, they highlight the role of higher education institutions (HEIs) in preparing graduates for the labour market, with an analysis by Petruzziello et al. (2023) highlighting specifically the importance of teaching staff support. Aničić et al. (2023); Ho et al. (2023); Thompson et al. (2023); and Tomlinson et al. (2023) suggest that HEIs need to focus on developing both generic and digital competences through their curricula (for the department level interventions), and the importance of robust career support services (for the institutional level interventions) to help students transition smoothly into the workforce. Significant gaps are identified in the skills developed in programmes of study and in the workplace, which are linked to graduates' success. Finally, a common theme is that of the role of graduates' perceptions of the labour market and their experiences in finding employment.

Ho et al. (2023) use data on 512 Vietnamese economics students before their internships and 322 of them after four months. The focus is on the role of career development learning (CDL) on students' perceived employability (SPE), i.e. students' beliefs about their likelihood of obtaining and maintaining employment. SPE involves both personal attributes and environmental factors, with universities playing a crucial role in enhancing students' personal competencies. The pandemic provides an opportunity to reassess the effectiveness of employability initiatives such as the internship programme. Econometric findings suggest the need for better alignment between university study and workplace requirements to reduce unemployment caused by mismatches between graduates' skills and employers' demands. The study confirms that CDL positively influences SPE over time and highlights the importance of CDL in helping students to develop clear career paths and acquire necessary qualifications. The findings suggest that students' investment in their human capital enhances their perceived employability. The findings are interesting as anecdotal evidence suggests economics students struggle with the general employability programmes offered by the university or Business School, and this lack of awareness of their value can translate into poor student evaluations of employability programmes and a lack of engagement from economics students. The paper suggests that considering how to tackle students' perceptions about their readiness for the world of work could be a useful tool in enabling students to see the value of this often-generic offering.

Thompson et al. (2023) use data from an online survey of 729 students from various universities in the United States, with 520 students (71.3 %) utilising university career services. The participants ranged from first-year undergraduate to postgraduate students majoring in various disciplines. The survey used a five-point Likert scale to measure students' perceptions of career services and their career optimism using the Social Cognitive Career Theory (SCCT). They define career optimism as the expectation of positive outcomes in one's future career and SCCT is used as it focuses on three interrelated aspects of career development: self-efficacy, outcome expectations and goals. Economics majors (along with business; mathematics; science and engineering/technology majors) did not show a significant increase in career optimism following engagement with careers services. The authors suggest this is possibly due to already high levels of career optimism because students already have clear career goals and high confidence in their career prospects. These findings, based on survey data from students during autumn 2020, a period affected by the COVID pandemic, confirm the finding in Ho et al. (2023) of the labour market confidence of economics graduates compared with other social science graduates.

Tomlinson et al. (2023) examine the effects of the COVID pandemic on the employment outcomes and career trajectories of recent UK graduates. The study uses data from two longitudinal surveys conducted by the Association of Graduate Careers Advisory Services (AGCAS). The first survey, conducted between December 2020 and February 2021, captured the impact of the pandemic on graduates' employment outcomes six months after graduation. The second survey, conducted in June and July 2021, measured graduates' progression one year after graduation. The focus of the paper is the potential for a labour market scarring effect of graduating during the COVID-19 pandemic. While this paper does not distinguish between graduates' disciplines of study, it provides a useful comparison to Ho et al. (2023) for Vietnam and Thompson et al. (2023) for the US. The findings suggest that graduates perceived significant challenges in the labour market due to the pandemic, with the majority believing that the pandemic had a detrimental impact on job opportunities and employment prospects. The recruitment process was perceived as challenging, with few graduates feeling supported by employers. In addition, the pandemic negatively affected graduates' ability to access the job market and their career outlook. Many graduates struggled to find appropriate graduate-level work and felt that the pandemic had damaged their job prospects. There were widespread concerns about reduced networking opportunities and the ability to gain valuable work experience. Graduates also reported feeling less confident about their future employment and career progression. Over half experienced periods of unemployment or underemployment, which adversely affected their well-being, confidence, and perception of their degree's value. Many graduates felt that their skills were not valued. The study found early signs of scarring, with graduates reporting lowered confidence, reduced morale, and fears of being less attractive to employers.

Six months further into graduation, many graduates still faced significant challenges in finding employment aligned with their qualifications. Those who were unemployed or underemployed reported concerns about the devaluation of their skills and the potential stigma of prolonged unemployment. Graduates also struggled with maintaining motivation and focus, gaining relevant work experience, and developing meaningful social networks. Given that economics students were likely to be more confident in their chances to be successful in the labour market (Ho et al. 2023 and Thompson et al. 2023), this may have acted as a protection factor during the pandemic, especially given their discipline knowledge that this was a shock to the economy rather than them having a lack of personal skills to find employment.

Aničić et al. (2023) use data from the Croatian national graduate survey of 2817 graduates in 2017 (i.e. pre-pandemic) who

completed their studies in the academic year 2015/2016. The sample is separated by discipline of study, with most respondents from social sciences (49.4 %) including economics. The study emphasises the importance of generic competences, which are transferable across different domains and contexts, for a successful transition from higher education to the workforce. Among the key generic competencies for work they identify ability to work autonomously, take responsibility and adapt to new situations across all disciplines. For digital competences, browsing and searching data, evaluating the credibility of sources, and communicating through digital technologies were considered most important. Ultimately, Aničić et al. (2023) identify seven groups of competence gaps: critical thinking and reasoning; general digital competences; technical digital competences; intercultural competences; practical knowledge and its application; adaptability; and entrepreneurial spirit and leadership. Of these seven groups, graduates in technical sciences and social sciences (where economics is based) had gaps close to the overall average in all these areas, but larger gaps in adaptability and practical knowledge. Linking to Ho et al. (2023) and Thompson et al. (2023), these seven groups of competence are the focus of employability programmes, which economics students are often reluctant to engage with based on their career optimism and SPE. The findings of Aničić et al. (2023) suggest there is scope for further research focused on challenging economics students' unconscious bias of their self-worth, enabling them to engage with the wider employability offers of career services.

Across UK higher education, Quinlan and Corbin (2023) use survey methods to identify the impact of university study on changes in career interests, with 61 % of students reporting changes in their career interests during their studies, with white students, and students with a clear career plan at the beginning of university more likely to report changes in their career intentions. The content of the curriculum was seen as the most important reason for changing career interests (46 %), with placements (14 %) and work experience (7 %) providing other strong reasons for changes. There are links between Quinlan and Corbin's (2023) analysis and the minimal literature found that focuses on PhD study, in which a key question is the determinants of the quality of job placement for doctoral graduates. Ábrahám et al. (2022) investigate the relationship between the duration of a PhD programme and the prestige of the student placement in Europe. Whilst the authors cannot identify the mechanisms, they find that PhD students who take longer to enter the job-market, on average, are more likely to move directly into assistant professor roles, rather than taking, for example, post-doc positions. Meanwhile, Ashonibare (2022) identifies that an increasing number of PhD graduates are moving into careers in industry, rather than academia, and argues that PhD programmes should provide training to develop transferable skills for these industry careers.

3. Conclusions

This review demonstrates the range and quality of contributions to the pedagogy literature, both general and economics specific, in the 2022 and 2023 calendar years. As was the case in the earlier review of Birdi et al. (2023), articles continue to be published that utilise the natural experiment provided by the changes in teaching and assessment methods associated with the COVID pandemic, to offer lessons on a range of topics associated with teaching methods and assessment design. Post-pandemic, we see an increased concern regarding the impact of the pandemic on graduate employment outcomes. More generally, research has continued on diversity and inclusivity issues, with research emerging on dimensions of diversity beyond gender, with greater attention paid to awarding gaps and how these can be reduced. It is hoped that this research will continue. As in Birdi et al. (2023), we suggest that opportunities remain for further literature to provide advice on module and programme design. Finally, we look forward to seeing further literature on the challenges and opportunities for economics higher education of generative artificial intelligence (AI), and on support for economics PhD students as the education of these students is currently often overlooked in the literature.

Acknowledgements

Appendix 1

In line with the literature themes identified in Table 2 above, we provide a table of the key papers reviewed according to theme. Not all papers mentioned in the analysis above are included, for the sake of brevity.

Theme 2022–2023	Key Paper Author(s)	Year of Publication
Methodology	Nieminen *et al.*	2022
Classroom Practice	Atwood *et al.*	2023
Module Design	Burnham *et al.*	2023
	Tackett	2023
	Tucker *et al.*	2023

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Theme 2022–2023	Key Paper Author(s)	Year of Publication
Assessment	Freitas	2023
	Depro and Rouse	2022
	Tai *et al.*	2023
Diversity	Siegried	2023
	Berik and Rodgers	2023
	Tai *et al.*	2023
	Brown-Roberton and Nichols	2023
Resilience	MacArthur and Santo	2023
Skills and Employability	Tomlinson *et al.*	2023
	Ho *et al.*	2023
	Thompson *et al.*	2023

Data availability

No data was used for the research described in the article.

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