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DISRUPTING INEQUALITY: EVALUATING THE ROLE OF FAMILY AND SCHOOL-RELATED FACTORS IN THE EDUCATIONAL OUTCOMES OF IRISH STUDENTS WITH SE

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Article Info

Keywords: special educational needs, Growing Up in Ireland, bioecological approach, early school leaving, post-school planned pathways.

Abstract

This study explores the impact of special educational needs (SEN) identification in primary school on the post-school outcomes of young people in Ireland, using data from the Growing Up in Ireland study. The study analyzes the influence of personal and contextual factors, particularly family, teachers, friends, and school, on early school leaving and post-school planned pathways. Results indicate that, although young people with SEN are at greater risk of early school leaving and less likely to attend higher education, childhood SEN status is no longer a significant factor in these outcomes after accounting for personal and contextual factors. Rather, students with SEN experience increased economic vulnerability and attend schools with a socioeconomically vulnerable profile. The study highlights the importance of an ecological understanding of young people's trajectories and the cumulative disadvantages they face in shaping key educational outcomes, suggesting efforts to support retention and pathway planning must incorporate a more supportive and inclusive school culture that reduces inequalities.

Introduction

Young people with special educational needs (SEN) are more likely to experience negative educational outcomes, such as early school leaving and reduced opportunities for post-school education and employment. This study explores the impact of SEN identification in primary school on the post-school outcomes of young people in Ireland using data from the Growing Up in Ireland study. Guided by a bioecological approach, the study examines the role of personal and contextual factors in influencing educational outcomes. This approach considers how proximal processes, such as interactions between individuals and their environments, shape developmental outcomes over time. The study's main research questions are: (1) How does SEN identification in primary school affect early school leaving and post-school planned pathways among young people? and (2) How do family, school-related, and personal characteristics interact with SEN status to shape educational outcomes? The study's findings emphasize the importance of understanding the complex challenges faced by young people with SEN

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and their families, and identifying supportive and inclusive strategies to reduce inequalities and promote retention and pathway planning.

BIOECOLOGICAL FRAMEWORK

Bronfenbrenner's (1989; Bronfenbrenner & Morris, 2006) bioecological theory and the resulting Process–Person– Context– Time (PPCT) model enable us to understand long- term trajectories of 17- year- olds in Ireland. The bioecological systems theory and PPCT model locate developmental outcomes as a function of *proximal processes* that result from the interaction between the *person* and their *context* over *time*. In this view, development itself is a set of interactions between the person and their environment that produce both constancy as well as change in the persons' characteristics (Bronfenbrenner, 1989). GUI data allow us to trace this multifaceted interaction over the life course. Prior studies have suggested that an ecological framework is appropriate for understanding the lived experiences and transitions of young people with SEN (Algood et al., 2013; Rous et al., 2007; Sontag, 1996), especially when underpinned by nationally representative longitudinal data (Ben- David & Nel, 2013; Lindsay et al., 2018). While studies based on such data cannot match the nuance of qualitative engagement with young people with SEN, or include the young person's own voice and understanding of their own experiences, they are a vital complement to studies which do provide that rich data because of the national-level perspective they provide and the range of variables they can consider.

Tudge et al. (2016) have also suggested that many studies which employ ecological frameworks do not accurately represent it or apply it to describe or test the key concepts, such as proximal processes, person characteristics and context (p. 427). Using a PPCT approach, this study tests the association between four *proximal processes* on early school leaving and post- school plans: (1) level of conflict with primary caregiver; (2) quality of interaction with teachers; (3) quality of interaction with friends; and (4) receipt of additional academic support in school. Childhood SEN status, sex, self- concept and academic achievement are included as personal characteristics. Context variables considered are household economic vulnerability, neighbourhood characteristics, whether the school is identified as serving a socioeconomically disadvantaged population and whether a vocational track is available at upper secondary.

DATA AND METHODOLOGY

Data source

This study draws on data collected as part of the first, second and third waves of the GUI's child cohort study, allowing the observation of phenomena over time. GUI followed a rigorous ethical review process at each wave of data collection: including the identification of ethical issues and procedures to deal with them, in particular to meet obligations under the relevant acts in Irish legislation. The primary concern at all times was the protection of child participants in the study. All interviewers, as well as other staff working on GUI, were security vetted by An Garda Siochana (the Irish Police Service) and a full module on ethics was included in the interviewers' training course. The Ethics Committee was very active in its consideration of all the materials and procedures used in the study, prior to awarding ethical approval (see Murray et al., 2010 for procedures in respect of the first wave).

GUI employs a fixed panel design. At wave 1, GUI gathered data on 8570 9- year- olds in Ireland in 2007/2008 (Williams et al., 2009). Data collected at this time point from young persons, their primary caregivers and their teachers are used to identify personal characteristics at wave 1: (1) SEN status; (2) sex; (3) self- concept; and (4) academic achievement. The next wave of the child cohort was collected when participants reached the age of 13. At this point, all but 3% of respondents have made the transition from primary to secondary school (Williams et al., 2018). The response rate at wave 2 was 88.9% of the wave 1 respondents, including 7525 participants (Quail et al., 2014). The four proximal processes that connect personal characteristics and environmental factors are retrieved from wave 2 of the child cohort. Data from the first two waves of GUI's child cohort are used to identify context variables. The third wave of data from the child cohort was collected in 2015/2016, when these young

people reached the age of 17 (80% of respondents) or 18 (20% of respondents). The third wave collected data from 6216 young people, including 73% of the wave 1 participants (McNamara et al., 2020). Data from wave 3 were used to retrieve the outcome variables employed by this study. Respondents who participated in all three waves are included in this analysis. Data were weighted using the weighting factor for the full sample at age 17 for the participants in waves 1, 2 and 3 (Murphy et al., 2020), producing a nationally representative sample.

Outcome variables

Three dichotomous outcome variables are used as part of this study: (1) early school leaving; (2) planning to attend higher education post- school; and (3) planning to attend further education and training (FET) post- school. Outcome variables are derived from the third wave of the child cohort of GUI, when respondents were 17 years old. Overall, Ireland has high rates of progression to higher education, and the dominance of higher education has had important implications for young people in Ireland, particularly those from more disadvantaged backgrounds (McCoy, Smyth, et al., 2014). Further education and training have traditionally been undervalued, although recent years have seen a focus on creating a more unified sector and accreditation system and improving the quality and relevance of provision (McGuinness et al., 2014). Early school leavers include: (1) students who left school prior to completing the Leaving Certificate examination— the terminal Irish secondary school exam; and (2) students who are still in school at the stage of data collection, but do not plan to complete the Leaving Certificate (or equivalent). While the compulsory minimum school leaving age in Ireland is 16, previous research studies have used the Leaving Certificate examination as the standard benchmark to identify early school leaving due to its consequential impact on multiple post- school opportunities (McCoy, Smyth, et al., 2014). Using this definition, 3% of respondents (n = 181) are identified as early school leavers. Ireland is one of the EU countries with the lowest rate of early school leaving. National estimates suggest that in 2018, 5% of 18 to 24- year- olds in Ireland were early school leavers (CSO, 2019), indicating a slight under- representation of early school leavers in wave 3 of the GUI child cohort.

At age 17, respondents are asked: 'What do you think you are most likely to do when you leave school?' Analyses focus on the likelihood of planning for two main post- school pathways: FET and higher education. At age 17, 79.8% of respondents still in school indicate they plan to attend higher education and 9.2% indicate they plan to attend FET. In 2018, 63.4% of students transitioned from secondary to higher education and 25.9% transitioned to FET (Department of Education, 2020). This suggests that 17- year- olds overestimate the likelihood of attending higher education and underestimate the likelihood of attending FET.

Proximal processes variables

The proximal processes included in the analysis aim to capture the interaction between young adults and important actors in their lives and environment at age 13 in order to understand early school leaving and post- school planned pathways at age 17. The level of conflict (M = 15.08; SD = 6.44) between primary caregivers and young adults is measured using the Pianta Child– Parent Relationship conflict subscale (Driscoll & Pianta, 2011). Levels of conflict have previously been linked to various academic and non- academic outcomes (Branje et al., 2010; Pianta et al., 1997).

Quality of interaction with teachers is measured using self- reported data from respondents at age 13 using three teaching- style items: (1) 'You are told by a teacher that your work is good' (scale reversed); (2) 'You are given out to [reprimanded] by a teacher because your work is untidy or not done on time'; and (3) 'You are given out to [reprimanded] by a teacher for misbehaving in class' (α = 0.588[2]). The items were measured on a four- point Likert scale (very often/often/a few times/never). The negative interactions with teachers dummy variable contrasts students for whom, on average, interactions with teachers have been negative very often or often (scoring 6 or less) with those who have had, on average, negative interactions a few times or never. Quality of interactions

with teachers has previously been found to be an important predictor of educational achievement and post- school pathways (McCoy, Smyth, et al., 2014).

Quality of interaction with friends is measured using the alienation subscale of the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987). The alienation subscale (M = 13.91; SD = 4.31) has been found to have high internal reliability (Thornton et al., 2016). One additional school- related proximal process is included in the analysis, pertaining to whether students receive additional support in school. At wave 2, respondents are asked: 'Some students get extra help at school in some subjects. Over the last 12 months, have you received any extra help within school in any subject?' Altogether,

15.7% of GUI respondents at wave 2 received additional academic help. While 8.9% of students with no SEN received additional help, 37.6% of students with SEN received additional help at wave 2. Hence, less than 4 out of 10 students identified with SEN at age 9 report that they receive 'extra help' 4 years later, when many have transitioned into secondary education. These results reflect the broad definition of SEN used, including physical, communicative, emotional/behavioural as well as learning difficulties. Receiving additional academic support in school is viewed as a proximal process that may particularly benefit students with SEN. However, it can also be interpreted as a reflection of SEN type and complexity. The measure does not capture the intensity of the support students receive, or otherwise indicate how sufficient the support is in terms of meeting the students' needs.

Person variables

In line with earlier research (McCoy, Banks, et al., 2016; McCoy, Maître, et al., 2016), we draw on information from multiple informants to derive an additive SEN measure at age 9. This includes teacher responses to the question on whether each child experienced one of four main disabilities— physical, speech, learning and emotional/behavioural. We then add children not identified by teachers but identified by their parent(s) as having a learning difficulty or communication or coordination disorder, speech difficulties or a chronic physical or mental health problem, illness or disability which hampers their daily activities. The third source adds children with mental health or emotional/psychological difficulties. Here we use the 'strengths and difficulties' (SDQ) scale completed by teachers in respect of each child, the results of which are used to generate a total difficulty score ranging from 0 to 40, from which a 'high- risk' group of children with significant emotional and behavioural difficulties is identified. Altogether, 24.6% of students had SEN at age 9, representing 2108 children in wave 1 (and 6460 without SEN). While this approach draws on the richness of the available evidence and reflects resource allocation in Irish primary schools in particular, it does not include all SEN domains and also lacks the opportunity to cross- check reporting across key informants. Our approach also identifies SEN status at one point in time, mid- childhood, and hence does not assess changing SEN status over the educational career. Further, this paper does not distinguish between SEN types in order to accommodate analyses on the small number of early school leavers.

The sex of the respondents is based on information from primary caregivers at wave 1. The Piers– Harris Self-Concept Scale (Piers et al., 2002) is used to measure how children feel about themselves at age 9. It is multidimensional and used to measure self- perception across a number of different domains: physical appearance and attributes; freedom from anxiety; intellectual and school status; behavioural adjustment; happiness and satisfaction; and popularity (see McCoy, Banks, et al., 2016 for further details). The Piers– Harris measure is argued to be 'one of the best if not the best questionnaire of its type' (Kelley, 2004). This measure was previously linked to both academic and socioemotional outcomes of students with SEN (McCoy, Maître, et al., 2016). Academic achievement at age 9 is measured using the standardised Drumcondra primary reading test logit score (Educational Research Centre, 2007).

Context variables

Context variables considered in this paper pertain to the home, neighbourhood and school ecosystems that young adults have been part of at various time points. Economic vulnerability is used to measure the home context. This is a composite measure based on latent class analysis and comprises income poverty, household joblessness and financial strain (Whelan et al., 2015). Measures from waves 1 and 2 are used. The analyses in this paper compare the outcomes of young adults from households with economic vulnerability at either or both wave 1 or/and wave 2 (19.5%) relative to those who do not experience economic vulnerability at either wave (80.5%).

Perceptions of the local neighbourhood as reported by primary caregivers at waves 1 and 2 are used to measure neighbourhood vulnerability, previously found to shape outcomes (McCoy, Quail, & Smyth, 2012). Using a four-point Likert scale (from 'very common' to 'not at all common'), primary caregivers were asked how commonly the following are found in their neighbourhoods: (1) rubbish and litter; (2) homes and gardens in bad conditions; (3) vandalism; (4) people being drunk/taking drugs. At both waves, these items had high construct reliability (α = 0.835 at wave 1; α = 0.856 at wave 2). These individual items were summed and divided by four to give a total score for the physical disorder of the neighbourhood, ranging from 1 to 4, with higher scores indicating lower levels of physical disorder (that is, rubbish, vandalism, etc. being less common). The neighbourhood was considered vulnerable if primary caregivers gave an average of 2 or less ('very common' or 'fairly common') on items listed above in at least one wave (9.9% of the sample).

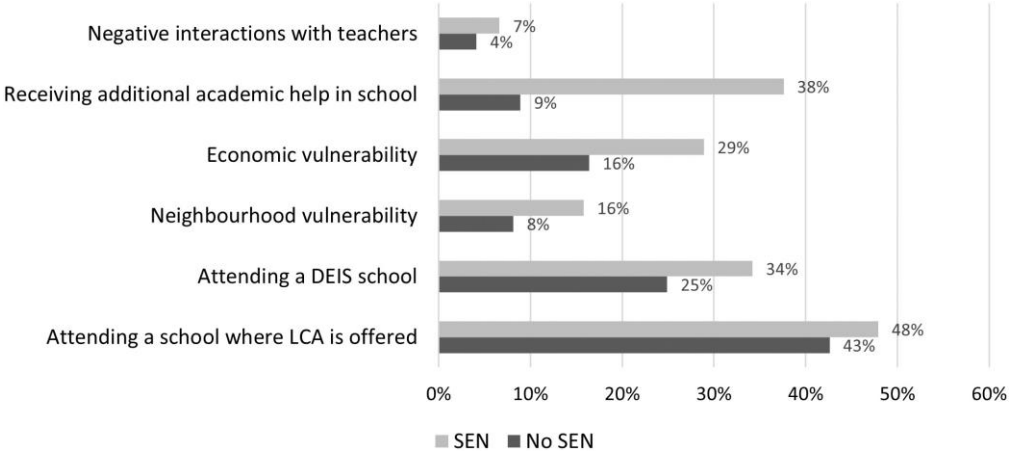
The socioeconomic profile of the schools attended at age 9 (primary school) and 13 (secondary school) is measured using the Delivering Equality of Opportunity in Schools (DEIS) status of the school. The DEIS programme recognises schools in areas with concentrated levels of disadvantage, with approximately 21% of primary and 27% of secondary schools taking part in the programme (Department of Education, 2017). Similarly, the outcomes of students who attended a DEIS school at both age 9 and 13, or at one wave only (27.2%), are compared to those who did not attend a DEIS school (72.8%). The availability of the Leaving Certificate Applied (LCA) programme at secondary school, as indicated by school principals at wave 2, is also included as a key context variable. As a distinguishing feature of the Irish context, the LCA programme offers a more vocationally oriented curriculum, does not allow direct entry to higher education and is available at a minority of schools, typically those with more socioeconomically disadvantaged intakes (McCoy, Smyth, et al., 2014). Overall, 43.9% of young adults attended secondary schools that offered the LCA programme.

RESULTS

Descriptive results

At age 17, fewer students identified with SEN in childhood were still in school (79.1%) than students not identified with SEN (84.8%). Among respondents who were still in school, students with SEN at age 9 were less likely to plan to attend higher education (66.3%) than students without SEN at age 9 (83.9%). At the same time, more students with SEN at age 9 were planning to attend FET (14.9%) than students without SEN at age 9 (7.5%). Only a small fraction of students was identified as early school leavers (3%), yet students identified with SEN at age 9 were twice as likely to be early school leavers (5.1%) than other students (2.3%). Chi- square analyses reveal that differences between students with SEN at age 9 and students without SEN at age 9 in early school leaving ($\chi^2[1, N = 6039] = 30.461$, $p < 0.001$), planning to attend higher education ($\chi^2[1, N = 5013] = 172.219$, $p < 0.001$) and planning to attend FET ($\chi^2[1, N = 5012] = 58.248$, $p < 0.001$) are statistically significant at the $p < 0.001$ level.

Gaps between students identified with SEN in primary school and their peers can also be noted across other characteristics (Figure 1). Young people with SEN at age 9 were



FIGUR E 1 Percentage of students by childhood SEN status across key characteristics. SEN, special educational needs more likely to experience conflict with their primary caregivers (M = 16.54) than their peers (M = 14.6), with a small but statistically significant effect size (Cohen's d = 0.3). They were also more likely to experience negative interactions with teachers (6.6%) than their peers (4.1%). Whereas 16.4% of young adults without SEN at age 9 come from economically vulnerable households, almost twice as many young adults with SEN at age 9 came from economically vulnerable households (28.9%). Almost 10% more of them attended DEIS schools (34.2%) than students without SEN at age 9 (24.9%). Students with SEN at age 9 were also more likely to attend schools where LCA was offered (48% vs. 43% for non- SEN students). All of these differences are significant at the $p < 0.001$ level. These descriptive findings point to the ecological nature of disadvantage, with SEN students more likely to experience difficulties in terms of household economic resources and more likely to attend schools in areas of concentrated socioeconomic disadvantage.

While statistically significant descriptive differences can be noted between students identified with SEN as children and their peers in terms of early school leaving and post- school planned pathways, it is important to understand if the associations persist upon accounting for key proximal process, as well as personal, and context factors.

Binary logistic regression results

The results of the three binary logistic regressions conducted are included in Table 1. Variance inflated factor analyses were conducted for the variables included in these models to ensure that multicollinearity does not affect the results. The binary logistic models test the association between four distinct proximal processes (measured at wave 2) and early school leaving, planning to attend FET and planning to attend HE (at wave 3), after accounting for key personal and context factors (measured across waves 1 and 2).

Among the proximal processes included, only the level of conflict between young people and primary caregivers had a statistically significant association with the three outcome variables. High levels of conflict between young adults and their primary caregiver were linked to increased early school leaving, increased likelihood of planning to attend FET and decreased likelihood of planning to attend higher education. Young adults who had negative interactions with their teachers often or very often at wave 2 were more than 3.2 times as likely to leave school early as their peers, making the quality of interaction with teachers

TABLE 1 Binary regression results for early school leaving, planning to attend FET and planning to attend HE

PPCT component	Variables	Early school leaving exp(*B*)	Planning to attend FET	Planning to attend higher education

			exp(*B*)	exp(*B*)
Proximal processes	Level of conflict with primary caregiver at wave 2	1.031*	1.027**	0.982**
	Low- quality interaction with teachers at wave 2 (ref. high-quality interaction)	3.277***	1.297	0.518***
	Alienation from peers at wave 2	0.983	1.020	0.992
	Receiving additional academic help at wave 2 (ref. not receiving additional academic help)	1.129	1.642**	0.639***
Personal characteristics	Having SEN at wave 1 (ref. no SEN)	1.475	1.191	0.883
	Female (ref. male)	1.230	2.040***	1.014
	Self- concept at wave 1	1.000	0.993	1.011*
	Drumcondra primary reading test score at wave 1	0.720**	0.664***	1.685***
Context characteristics	Economic vulnerability at wave 1 and/or wave 2 (ref. no economic vulnerability)	2.307***	2.038***	0.572***
	Neighbourhood vulnerability at wave 1 and/or wave 2 (ref. no neighbourhood vulnerability)	0.590	1.935***	0.683**
	DEIS school at wave 1 and/or wave 2 (ref. did not attend DEIS school)	3.017***	1.468**	0.550***
	Leaving Certificate Applied offered at wave 2 (ref. not offered)	1.322	1.460**	0.927
Negelkerke R^2		0.129	0.157	0.168
Hosmer– Lemeshow test		0.111	0.233	0.079
N		5198	4565	4565

Note: Data from GUI child cohort, waves 1, 2 and 3 (at 9, 13 and 17 years).
Abbreviations: DEIS, Delivering Equality of Opportunity in Schools; FET, further education and training; GUI, Growing Up in Ireland; PPCT, Process– Person– Context– Time; SEN, special educational needs.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

the most consequential proximal process for early school leaving. While no association between negative interactions with teachers and planning to attend FET was noted, students who had positive interactions with teachers were twice as likely to plan to attend higher education compared to their peers who had negative interactions with their teachers often or very often.

Across outcome variables, the quality of interaction with peers at wave 2 did not have a statistically significant association with early school leaving and post- school plans. Students who received additional academic help at wave 2 and those who did not receive additional help were equally likely to be early school leavers, but receiving additional help had strong associations with the post- school pathways students were planning to pursue. Students who received additional help at wave 2 were 1.6 times more likely to plan to pursue FET and less likely to plan to pursue higher education than their peers who did not receive help. It is possible this reflects differences in complexity of need, with students with more complex needs perhaps more likely to receive additional supports at school.

After accounting for proximal processes, other personal characteristics and context characteristics, the association between childhood SEN status on the one hand and early school leaving, planning to attend FET and planning to attend higher education on the other hand, was not statistically significant.

Girls and boys were equally likely to leave school early and plan to attend higher education, but girls were more likely than boys to plan to attend FET, reflecting the traditionally gendered nature of provision (McGuinness et al., 2019). While self- concept at wave 1 did not have a statistically significant association with early school leaving and planning to attend FET, young people with higher self- concept were more likely to plan to attend higher education. The three outcome variables were associated with academic achievement at age 9, with students with higher reading scores less likely to become early school leavers and plan to attend FET and more likely to plan to attend higher education.

Family, neighbourhood and school context characteristics mattered across outcome variables, reflecting variation in access to learning and other resources in the home and school settings. However, these characteristics matter in different ways across the outcomes studied. Students with fewer household economic resources were more than twice as likely to become early school leavers and plan to pursue FET, and only half as likely to plan to pursue higher education as their peers from households with greater resources, in line with earlier research (McCoy & Byrne, 2011). After accounting for economic vulnerability, young adults from vulnerable neighbourhoods were twice as likely to plan to pursue FET as their peers. After accounting for household and neighbourhood vulnerability, students from DEIS schools at wave 1 and/or wave 2 were three times more likely to be early school leavers. They were also more likely to plan to attend FET and less likely to plan to attend higher education, reflecting earlier evidence on the role of school context in post- school decision- making (Smyth & McCoy, 2021). Students at schools that provided the LCA programme at wave 2 were more likely to plan to attend FET than their peers at schools that did not offer LCA, reflecting the programme's orientation towards vocational pathways.[3]

Limitations

Our study, and the bioecological framework employed therein, seeks to exploit the potential of three waves of data collection, at 9, 13 and 17 years. We draw on variables measured at different waves and hence at different stages in young people's lives. The selection of variables/waves is informed by a PPCT model, and we acknowledge limitations in doing so. For example, we measure SEN status at 9 years of age, which is likely to miss students identified with additional needs in late childhood and adolescence. We acknowledge that young people may move between SEN and non- SEN categories, and also between categories of SEN and between levels of severity of SEN (Meschi et al., 2012), which this paper does not examine. It is possible these young people

might have different experiences within the educational system, and different influences on their educational trajectories.

In constructing our SEN measure, the approach allows for the identification of a broader group of children with some form of SEN, but it lacks the opportunity to cross- check identification across informants. It also means that the SEN population identified may not be fully comprehensive, and any analysis is limited by the questions (or domains) included. It is also possible that our approach over- identifies the SEN population, but it can be noted that it is consistent with similar research based on cohort studies in the UK and the Netherlands (Croll & Moses, 2003; Van Dijk et al., 2003).

As with many analyses of secondary data, we are constrained by limitations in the way in which the data were collected. We note that some of the variables would benefit from greater clarity, further detail or response options. One example relates to the item regarding whether students receive 'extra help', which is open to a broad range of interpretation. The variable likely includes wide diversity in the types of 'help' or support received, the source/ level of specialisation, the intensity and permanence/duration of the supports, all of which will likely be important in shaping the effectiveness and impact of the intervention. In terms of self- concept, we acknowledge limitations in confining our analysis to the Piers– Harris self- concept scale. Research has highlighted the importance of considering domain- specific evaluations as well as children's overall evaluation of their global self- worth as a person (Harter, 2006).

The analysis does not distinguish between SEN types, or complexity, in order to accommodate analyses on the small number of early school leavers. While this approach allows for a more inclusive identification of SEN, as a limitation, it does not account for variations in the type and complexity of need among SEN students. Further research should investigate the experiences and outcomes of young people with varying SEN types and complexity through recruiting a larger sample of SEN students or through targeted qualitative research approaches. It can also be noted that there were only a small number of special schools included in the sampling frame for the study at wave 1, so it is not possible to compare students attending special and mainstream schools. Ongoing primary research by the authors is examining the post- school trajectories and experiences of students attending special and mainstream schools in Ireland, and will hopefully address this important gap.

DISCUSSION AND CONCLUSION

Academics have highlighted that childhood disability has been largely overlooked in social stratification research, and consequently we have little understanding of the mechanisms underpinning well- documented disability differentials in educational outcomes (Chatzitheochari & Platt, 2019). Recent research points to primary effects, reflected in differences in school performance between disabled and non- disabled young people. However, this research also finds evidence for secondary effects, with educational expectations playing an important role at crucial transitions in the English school system (Chatzitheochari & Platt, 2019, p. 502). Consistent with this and other research internationally, this study finds that students identified with SEN in childhood have higher rates of early school leaving (Cederberg & Hartsmar, 2013; De Witte et al., 2013; Stokes, 2003; Watson & Nolan, 2011). However, after accounting for proximal processes, personal and context characteristics, childhood SEN status was no longer associated with early school leaving and post- school planned pathways. When interpreting the results of this study, attention should be given to the fact that students with SEN at age 9 were more likely to experience cumulative risk factors shown to impact on early school leaving and post- school planned pathways, and these are key mechanisms in understanding SEN differentials. Approaching these results through a bioecological lens, we can see that post- school plans and outcomes are a systemic phenomenon, and that certain risk factors tend to be more prevalent in the lives of some groups of young people. SEN students were more likely to experience conflict in their interactions with their primary caregiver, have negative interactions with their teachers, come from economically vulnerable households and attend schools with more socioeconomically

disadvantaged populations. This study has attempted to disentangle some of the intersectional disadvantage experienced by children identified with SEN, and the results reveal individual- and school- level factors which are associated with the divergent outcomes, all of which highlight the importance of wider policy reform and intervention.

The analysis also shows that positive interactions with teachers acts as a protective factor to reduce early school leaving (Cobb et al., 2006; Freeman & Simonsen, 2015; Markussen et al., 2011; McCoy, Smyth, et al., 2014). Increased self- concept may increase the likelihood of planning to attend higher education. This finding is not inconsistent with prior research (McCoy, Banks, et al., 2016), but it offers evidence that self- concept matters for some but not all academic outcomes. Consistent with prior studies, this research found that higher levels of conflict with primary caregivers were associated with poorer academic outcomes (Branje et al., 2010; Pianta et al., 1997).

It is interesting to note that the association between childhood SEN status and early school leaving was sensitive to the academic achievement measure included in the models. The effect of SEN status at age 9 persisted after accounting for the Drumcondra maths logit score at wave 1, but did not persist after accounting for the Drumcondra reading logit score at wave 1 as well as academic measures from later GUI waves. Previous studies point towards greater social differentiation in maths performance relative to reading (McCoy, Byrne, et al., 2012). Prior research has also shown that Drumcondra reading and maths achievement scores at age 9 are shaped by both similar as well as divergent factors, potentially indicating why the association between childhood SEN status and early school leaving was sensitive to the academic domain included (O'Connell, 2018).

Priority education policies like the DEIS programme are centred on providing additional resources to schools or areas serving socially and academically disadvantaged populations and are in place in more than half of all European countries. Variation in nature and scale of the intervention/resources provided and diversity in the measurement of impact means there is no consensus on their impact. Within Ireland, there are concerns that the additional resources provided are not proportionate to the greater needs of students attending such schools (Carroll & McCoy, 2021), and thus existing gaps in attainment, attendance and other key areas will persist. Globally, some studies point to sorting effects and growing segregation (Davezies & Garrouste, 2020). Replacing school- based policies with individual- based ones could reduce the polarisation of schools into DEIS and non- DEIS, and reduce this segregation of students by socioeconomic status, as well as providing needed resources to students in non-DEIS schools. However, individual- based approaches carry the risk of dissociating individuals from the school and local context, thereby moving away from addressing context effects and increasing the overall level of inequality in the education system.

Overall, the bioecological approach taken by this paper illustrates systematic gaps between the students who plan to attend higher education and those who plan to attend FET. What students do after school is not simply the result of choice, but also shaped by relationships with family and teachers, personal characteristics and context characteristics. In common with previous studies, earlier academic performance predicts later performance (Vinas- Forcade et al., 2020). If students who have higher academic achievement, come from well- resourced households and neighbourhoods, and attend non- DEIS schools are more likely to plan to attend higher education, the reverse is the case for students who plan to attend FET. Track placement at upper secondary level is also important, with vocational tracks channelling young adults towards FET. On the one hand, these gaps underline how post- school pathways both reflect and contribute to social stratification. On the other hand, they highlight the importance of diverse post- school pathways to provide learning opportunities for all.

Our findings show the prominence of FET as a pathway for young adults with additional needs. In this realm, current reforms in Ireland to streamline and facilitate transition from FET to higher education are particularly important (Department of Education and Skills, 2020). An integrated tertiary education system is key in

supporting progression for all learners, in particular addressing progression from FET to HE, which 'remains confusing, complicated, and in some cases not very transparent' (O'Callaghan & O'Sullivan, 2020, p. 31), an issue which has also attracted debate in other countries (Bailey et al., 2015; Deissenger et al., 2013).

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CONFLICT OF INTEREST

The authors declare that they have no relevant or material financial interests that relate to the research described in this paper.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from Ireland's Central Statistics Office (CSO). Restrictions apply to the availability of these data, which were used under licence for this study. Data may be obtained by registered research organisations with the permission of the CSO. Growing Up in Ireland (GUI) is funded by the Department of Children, Equality, Disability, Integration and Youth (DCEDIY). It is managed by DCEDIY in association with the CSO. Results in this paper are based on analyses of data from Research Microdata Files provided by the CSO. Neither the CSO nor DCEDIY take any responsibility for the views expressed or the outputs generated from these analyses.

ETHICAL APPROVAL STATEMENT

Ethical approval is not applicable for this study as it is based on Growing Up in Ireland data. Growing Up in Ireland was carried out under ethical approval granted by an independent Research Ethics Committee set up by the Irish Department of Children and Youth Affairs.

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ENDNOTES

1 Growing Up in Ireland (GUI) is funded by the Department of Children, Equality, Disability, Integration and Youth (DCEDIY). It is managed by DCEDIY in association with the Central Statistics Office (CSO). Results in this report are based on analyses of data from Research Microdata Files provided by the CSO. Neither the CSO nor DCEDIY take any responsibility for the views expressed or the outputs generated from these analyses.

2 Cronbach's α is a measure of internal scale reliability. While traditionally $\alpha > 0.7$ has been used to indicate robust internal reliability, Cronbach's α has previously been shown to underestimate the reliability of scales that include less than 10 items (Herman, 2015).

3 Additional analyses revealed that the interactions between SEN status and sex, SEN status and economic vulnerability and SEN status and DEIS school were not statistically significant.

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