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A global policy in local context/a local policy in global context: investigating dual VET youth transitions in Coahuila, Mexico

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Submitted in fulfilment of the requirements of the Degree of Doctor of Philosophy (PhD)

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Abstract

In recent decades, a global agenda has developed to promote apprenticeships as an educational policy solution of near universal relevance. Among such models, dual vocational education and training (dVET) is often considered the 'gold standard'. As such, there has been intense activity to 'transfer' dVET from DACH countries (Austria, Germany, Switzerland) to elsewhere, including many low- and middle-income country (LMIC) contexts. Mexico is one such LMIC to have adopted dVET, in a process explicitly brokered by German co-operation actors. In 2013, the Modelo Mexicano de Formación Dual (MMFD) was piloted in 11 states, expanding over the proceeding decade.

This thesis identifies and addresses important gaps in research knowledge about 'transferred' dVET models of this kind, advancing theory about how dVET functions in LMIC contexts based on empirical research that centres the experiences and insights of young policy participants. Three waves of qualitative longitudinal interviewing were conducted with 16 MMFD participants (n=48) in the state of Coahuila, Mexico between February 2020 and February 2022. The Grammars of Youth framework developed by Ana Miranda and colleagues at FLACSO Argentina is used to conceptualise and explain the structures and strategies that mediate MMFD youth transitions.

Theoretically, the thesis extends the Grammars of Youth framework to develop a typology of grammars – i.e. structures – that mediate youth transitions, namely: subjective, temporal, and locational grammars. Subjective grammars relate to the influence of young people's intersecting social identities, temporal grammars relate to the specific time context in which youth transitions unfold, producing distinct cohort effects, and locational grammars relate to the multi-scalar socio-spatial contexts in which young people construct their transitions. In addition, this thesis also explains how and why MMFD participants employ different youth pragmatics – i.e. strategies – in their transitions and, thus, how grammars and pragmatics co-construct one another over time.

This rich and contextualised understanding of MMFD youth transitions is used to analyse MMFD policy features and suggest future policy directions to make dual training more effective and equitable. Furthermore, the 'local' case of the MMFD is used to scrutinise the discursive claims of the 'global apprenticeship agenda'. Theories and assumptions about how apprenticeships function are found to be troubled by the contextual realities in which policy participants live, particularly in LMICs. These inconsistencies contain important risks related to inequalities, exploitative practices, and programme ineffectiveness. Greater attention to the lives and desires of young people as the embodied protagonists of dVET is argued to be a crucial means of counteracting those risks and pursuing an expanded vision of what vocational education can achieve.

Contents

List of tables ... 7

List of figures ... 7

Acknowledgements ... 8

Author's declaration ... 9

Abbreviations ... 10

1. Introduction ... 12

1.1. Overview ... 12

1.2. Background of the study ... 15

1.3. Context: Mexico and the MMFD ... 17

1.4. Research aim, objectives, and questions ... 22

1.5. Structure of the thesis ... 23

2. Grey literature review: the apprenticeship discourses of international organisations ... 26

2.1. Introduction ... 26

2.2. Analytical framework and methodology ... 27

2.3. Summary and discussion of key findings ... 31

2.4. Conclusions ... 36

3. Academic literature review: dVET policy transfer and youth transitions in TVET ... 38

3.1. Introduction ... 38

3.2. dVET policy transfer ... 38

3.3. TVET and youth transitions ... 43

3.3.1. Transitions into TVET ... 45

3.3.2. Transitions through TVET ... 47

3.3.3. Transitions from TVET ... 50

3.4. Concluding comments ... 52

4. Analytical framework: The Grammars of Youth ... 54

4.1. Introduction ... 54

4.2. Conceptual approaches to the sociology of youth transitions ... 55

4.2.1. Looking to structures 55
4.2.2. Looking to agency 58
4.2.3. Bridging structure and agency 60
4.3. Selecting a conceptual framework 63
4.3.1. Initial considerations 63
4.3.2. The Grammars of Youth 65
4.4. Concluding comments 69
5. Methodology 71
5.1. Introduction 71
5.2. Theoretical groundings 71
5.2.1. Ontology and epistemology 71
5.2.2. Qualitative longitudinal research 72
5.2.3. Reflexivity and positionality 75
5.3. Research Design 79
5.3.1. Research independence and originality 79
5.3.2. Research questions 80
5.3.3. Sampling 81
5.3.4. Ethical considerations 85
5.3.5. Interview methods: waves one and two 87
5.3.6. Interview methods: wave three 89
5.3.7. Data analysis 90
6. Signpost to findings 94
7. Findings: subjective grammars 97
7.1. Introduction 97
7.2. Subjective grammars and participants' identities 98
7.3. Subjective grammars and accessing the MMFD 99
7.3.1. Pathways to application 99
7.3.2. Firms' selection of students 106
7.4. Subjective grammars and the MMFD experience 110

7.4.1. Learning in the workplace 110
7.4.2. Workplace treatment 112
7.4.3. Professional role models 116
7.4.4. Additional work 119
7.4.5. Participation costs 120
7.5. Subjective grammars and MMFD outcomes 122
7.5.1. Entering the labour market 122
7.5.2. Entering higher education 128
7.5.3. Trajectory continuity 134
7.5.4. Assuming adulthood 138
7.6. Concluding comments 142
8. Findings: temporal grammars 143
8.1. Introduction 143
8.2. Temporal grammars and the MMFD experience 144
8.2.1. Pandemic disruptions to school-based learning 144
8.2.2. Pandemic disruptions to company-based learning 146
8.3. Temporal grammars and MMFD outcomes 149
8.3.1. Labour market entry in the pandemic 149
8.3.2. Higher education in the pandemic 154
8.3.3. Personal and family life in the pandemic 160
8.4. Concluding comments 164
9. Findings: locational grammars 165
9.1. Introduction 165
9.2. Educational ecosystem 166
9.3. Youth collectivism 170
9.4. Neoliberalism and the global political economy 177
9.5. Concluding comments 183
10. Discussion and conclusions 184
10.1. Introduction 184

10.2. The grammars and pragmatics of MMFD transitions 185

10.2.1. Plotting a path 185

10.2.2. Navigating gender 187

10.2.3. Experiencing the world of work 188

10.2.4. Responding to crisis 189

10.2.5. Fashioning future selves 190

10.3. More equitable and effective MMFD policy 191

10.3.1. Addressing inequalities 191

10.3.2. Fostering training quality 195

10.3.3. Supporting transitions 197

10.3.4. Involving young people 198

10.4. A local policy in global context 199

10.5. Contributions, limitations, and future directions 203

Appendices 207

Appendix 1. Wave one interview schedule 207

Appendix 2. Wave two interview schedule 210

Appendix 3. Wave three interview schedule 212

Appendix 4. Plain language statement 214

Appendix 5. Participant consent form 216

References 217

List of tables

Table 1. Summary of grey literature review document selection process 30
Table 2. Comparative overview of IOs' discursive positions on apprenticeship policy 32
Table 3. Breakdown of wave one sample by gender and economic area 83
Table 4. Breakdown of wave two sample by gender and economic area 83
Table 5. Breakdown of wave three sample by gender and economic area 84
Table 6. Location of participants - waves one to three.. 84
Table 7. Summary of participants' gender, location, and carrera 96

List of figures

Figure 1. Overview of Mexican public education system, including upper secondary pathways 21
Figure 2. Diagrammatic representation of the Grammars of Youth framework 67
Figure 3. Interview waves as vital conjunctures for research participants...................................... 75
Figure 4. Grammars of Youth framework including subjective/temporal/locational typology........ 95
Figure 5. Grammars of Youth framework populated with the identified grammars and youth pragmatics of MMFD participants 185

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Author’s declaration

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Printed Name: Ellen Vanderhoven

Signature:

Abbreviations

CANACINTRA = The National Chamber of Manufacturing Industries, Mexico

CCA-VET = The critical capabilities account of vocational education and training

CECyTEC = The College of Scientific and Technological Studies of the State of Coahuila, Mexico

Cedefop = European Centre for the Development of Vocational Training

Coahuila = Coahuila de Zaragoza, Mexico

CONALEP = National College of Professional Technical Education, Mexico

COPARMEX = Employer's Confederation of the Republic of Mexico

dVET = Dual Vocational Education and Training

DACH = Germany, Austria, Switzerland

Edomex = State of Mexico, Mexico

ETF = European Training Foundation

EU = European Union

GCRF = Global Challenges Research Fund

GFC = Global Financial Crisis, 2007-9

GPE = Global political economy

HCT = Human capital theory

HE = Higher Education

ILO = International Labour Organization

INAP = International Network on Innovative Apprenticeship

IO = International organisation

IPE = Institutional Political Economy

IVET = Initial vocational education and training

LMICs = Low- and middle- income countries

MMFD = Modelo Mexicano de Formación Dual (Mexican Model of Dual Training)

MXN = Mexican peso

NEET = Not in education, employment or training

OECD = Organisation for Economic Cooperation and Development

ÖFSE = Austrian Foundation for Development Research

PPP = Purchasing power parity

PRI = Institutional Revolutionary Party

Profeco = Office of the Federal Prosecutor for the Consumer, Mexico

QLR = Qualitative longitudinal research

SEP = Secretariat of Public Education, Mexico

TVET = Technical and vocational education and training

UNAM = National Autonomous University of Mexico

UNESCO = United Nations Educational, Scientific and Cultural Organisation

UNHCR = United Nations High Commissioner for Refugees

UNICEF = United Nations Children's Fund

W1/2/3 = Wave 1/2/3 of longitudinal interviewing

1. Introduction

1.1. Overview

As part of a resurgent interest in technical and vocational education and training (TVET), apprenticeships have come to the fore as an educational policy solution of global interest (Akoojee et al., 2013; Gonon, 2014; Valiente and Scandurra, 2017). Indeed, as this thesis argues, there is evidence of a global agenda among international organisations and other actors to promote apprenticeships as an educational tool for (economic) development (Vanderhoven, 2023). Based on the economic successes of DACH countries (Austria, Germany, Switzerland) and as the 'gold standard' of apprenticeships, dual vocational education and training (dVET) has been the subject of intense international policy activity (DC dVET, nd; Fontdevila et al., 2022; Gonon, 2012; Langthaler, 2015). This includes 'transfer' to low- and middle-income country (LMIC) contexts that differ substantially in their social, economic, institutional, political, and cultural histories from DACH dVET countries, implying hierarchical flows of expertise and evaluative parameters from Global North 'donors' to Global South 'recipients' (Fontdevila et al., 2022; Maitra et al., 2022; Schmees and Smith, 2024; Valiente et al., 2021). Mexico is one such LMIC to have adopted dVET, in a process explicitly brokered and financed by German co-operation actors (Cervantes et al., 2021; López-Fogués et al., 2018; SEMS, 2015). In 2013, the Modelo Mexicano de Formación Dual (MMFD) was piloted in 11 states, expanding to further regions over the proceeding decade (SEMS, 2017; 2022).

This thesis identifies and addresses important gaps in research knowledge about 'transferred' dVET models of this kind. To date, research on dVET in LMICs has been limited in its theoretical development and empirical basis and has predominantly considered the perspectives of institutional-level actors, such as employers and policymakers (Vanderhoven et al., forthcoming). As such, this thesis examines the case of the MMFD to: i) advance theory about how dVET functions in LMIC contexts; ii) do so based on empirical research; and iii) centre the experiences and insights of young policy participants as hitherto under-represented stakeholders. Aligned with critical realist and youth studies traditions, this thesis explores the impacts of dVET policy on the youth transitions of MMFD students, taking careful account of the contextual conditions in which these unfold.

To do so, I employ and refine the Grammars of Youth framework (Bendit and Miranda, 2017; Miranda and Alfredo, 2022; Miranda and Corica, 2018) to conceptualise and explain the structures and strategies that mediate young people's training and transition experiences. Conceived based on longitudinal research into young people's school-to-work transitions in Argentina (Miranda and

Corica, 2018), the Grammars of Youth framework is intended to more accurately account for the contextual realities of Latin American youth transitions than those offered by Global North youth studies alone (Batan et al., 2020; Miranda and Alfredo, 2022). Reworking Sven Mørch's (1996) 'activity structure', the authors employ the linguistic metaphor of 'grammars' to describe the 'system of rules and interactions in which people were writing their biographical journey along the transitions towards adulthood' (Miranda and Alfredo, 2022: 236). As in language production, while grammatical structures provide rules and directions for the communication of meaning, an incredible complexity and diversity of self-expression is possible within those 'rules'. Indeed, as Bendit and Miranda (2017: 35, author's own translation) describe; 'grammars make up a structured system that allows for infinite sentences (biographies)'. The framework further accounts for the role of young people's subjectivities and agency by highlighting the creative and personalised ways in which individuals can respond to the 'grammars' surrounding them (Bendit and Miranda, 2017; Miranda and Alfredo, 2022). These responses and agentic actions come together in young people's strategies for transition, which combine their knowledge and assessment of the options and resources available to them with their own self-perceptions and self-interests to form 'youth pragmatics' (Bendit and Miranda, 2017). Thus, the twin concepts of grammars and pragmatics within the Grammars of Youth framework provide a contextually responsive and methodologically practicable means of exploring MMFD youth transitions.

The analysis contained within this thesis is based on three waves of qualitative longitudinal interviewing conducted with 16 MMFD participants (n=48) in the state of Coahuila, Mexico between February 2020 and February 2022. The three data collection periods coincided with three 'vital conjunctures' (Jeffrey, 2010; Johnson-Hanks, 2002) as relate to MMFD participation/graduation, age, and progression of the global Covid-19 pandemic. Data were analysed using a reflexive thematic analysis approach informed by a critical realist ontology and contextualist epistemology (Braun and Clarke, 2019; 2022).

Theoretically, the thesis extends the Grammars of Youth framework to develop a typology of grammars, namely: subjective, temporal, and locational grammars. Subjective grammars relate to the influence of young people's intersecting social identities on their transition experiences (i.e. *who you are* as a young person matters). For study participants, gender and social class were two subjective grammars that were decisive in shaping their pathways through and beyond the MMFD.[1] Temporal grammars relate to the specific time context in which youth transitions unfold, contributing to distinct cohort effects (i.e. *when* you are young matters). The temporal grammar of

[1] Although race and indigeneity are important facets of social inequality in Mexico (see section 3.4), this theme was not present in the data analysis (see further discussion in section 10.3.1).

the global Covid-19 pandemic was a profound and cohort-defining event for study participants as their MMFD training, graduation, and transition were severely disrupted. Finally, locational grammars relate to the influence of the multi-scalar socio-spatial contexts in which a cohort of diverse young people construct their transitions (i.e. *where* you are young matters). For study participants, locational grammars of the surrounding educational ecosystem, opportunities for youth collectivism, and urban Coahuila's relationship to Mexican neoliberalism and the global political economy were of particular importance for their transitions.

As previously outlined, the Grammars of Youth framework further proposes the concept of youth pragmatics to understand the strategies that young people develop, adopt, adapt, and discard as they construct their biographies over time in interaction with surrounding grammars. Therefore, in addition to identifying the above grammars of relevance, this thesis also explains how and why MMFD participants employ different youth pragmatics as they navigate the process of 'transition'. Utilising the longitudinal perspective of this research, it becomes possible to explore how grammars and pragmatics co-construct one another over time in a relationship of constraint-enablement and reproduction-transformation (here incorporating Archer, 1995).

On the basis of this rich and contextualised understanding of both grammars of youth and youth pragmatics, this thesis further analyses how the specific features of MMFD policy interact with the reality of young people's lives to promote or hinder the achievement of positive, developmental, and equitable training and transition experiences. These insights are used to suggest future policy directions that might help the programme in Coahuila and wider Mexico to become more effective and equitable for young people (Vanderhoven et al., 2024).

Finally, this new knowledge about the MMFD is reinserted into its global policy context, and the discursive claims of the 'global apprenticeship agenda' (Vanderhoven, 2023) are scrutinised. The theories and assumptions underlying globally circulated ideas about how apprenticeships function and what they can achieve are found to be troubled by the contextual realities in which young policy participants live, particularly in LMICs. These inconsistencies contain important risks related to inequalities, exploitative practices, and programme ineffectiveness. Greater attention to the lives and desires of young people as the embodied protagonists of dVET is argued to be a crucial means of counteracting those risks and pursuing an expanded vision of what vocational education can achieve.

1.2. Background of the study

This PhD was collaboratively linked to a pre-existing Global Challenges Research Fund (GCRF) project – *Dual Apprenticeship* – headed by the University of Glasgow, along with international academic partners[2] (hereafter referred to as *Dual Apprenticeship* or the GCRF project). *Dual Apprenticeship* (2019-2023) involved a comparative study of newly-established dVET interventions in two middle-income countries; Mexico and India. The GCRF project had a twin focus: firstly, to reconstruct and analyse the policy adoption process in each context to better understand the increasing global spread and popularity of dVET (Valiente et al., 2021). The second was to understand the implementation process in two contrasting regions of each country:[3] what experiences and understandings did regional policymakers, employers, educators, and trainees have of the programme, its successes, and shortcomings? For one particular strand of this broad task, *Dual Apprenticeship* was designed to include a repeat interview study with small cohorts of young people in each area, asking students about their view of the programme and their own futures shortly before and after graduating from a dual training programme.

The doctoral research project presented in this thesis was designed as a response to, and development of, the repeat interview aspect of *Dual Apprenticeship*, pursuing a medium-term picture of young people's post-MMFD transitions not possible within the lifetime of the GCRF project. I independently sought and was awarded funding from the Economic and Social Research Council's (ESRC) Student-Led Open Competition, elaborating a research design that would make further use of interview data collected by the GCRF project, extend that data further in time, and apply a distinct analytical focus on holistic youth transitions. Indeed, the two rounds of interviewing conducted under the auspices of *Dual Apprenticeship* constitute waves one and two of my own three-wave longitudinal study. In order to lend my distinct expertise to the project and ensure congruence with the third wave of data collection, I was variously employed in *Dual Apprenticeship* activities from 2019 to 2023, most notably to collect qualitative data with young people in Coahuila and Edomex (the interconnections and distinctions between these two parallel yet distinct research projects are discussed further in section 5.3.1). Through my involvement in both the GCRF project and this doctoral research, I have contributed to a variety of theoretical, empirical, and policy developments within the field of dVET policy (transfer) research – a brief overview of the publications stemming from these activities helps to contextualise the particular contribution of this thesis.

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[2] Tecnológico de Monterrey, Indian Institute of Management Calcutta, University of Cologne, University of Zurich. For more information, visit www.dualapprenticeship.org.

[3] Estado de México and Coahuila de Zaragoza in Mexico, and Gujarat and Delhi in India.

As part of my independent doctoral research, I conducted a semi-systematic review of publications produced by international organisations (IOs) on the topic of apprenticeships. This addresses a substantial gap in knowledge about IOs' role in the growing global popularity of apprenticeships. The detailed findings and methodology of this exercise are presented in an article in *Globalisation, Societies and Education* (Vanderhoven, 2023) and a more synthetic discussion of the findings can be found in chapter two of this thesis. In both, I posit that the concept of a 'global apprenticeship agenda' is a useful means of characterising increasing and systematic interest among global IOs in promoting apprenticeship models, with dVET held as the ideal or 'gold standard' form among these. Concurrently, while employed on *Dual Apprenticeship*, I contributed to a realist synthesis (Pawson et al., 2004) of academic literature concerning the transfer and transferability of dVET (Vanderhoven et al., 2021). This produced a review of 45 publications in English, German, and Spanish, offering a 'state-of-the-art' view of the field. Our findings pointed to the weak empirical basis and limited criticality of much dVET transfer research knowledge and called for reinforcement in this regard (Vanderhoven et al., forthcoming). Initial empirical findings from both *Dual Apprenticeship* and my doctoral research formed the basis of a knowledge exchange event convened with international policymakers held at the Austrian Foundation for Development Research (ÖFSE). This resulted in a report offering a number of policy directions for fostering human development outcomes of dual training programmes in LMIC settings (Vanderhoven et al., 2022). This was further developed into a forum between diverse academics and practitioners for the journal *Compare* (Vanderhoven et al., 2024). The article highlights four key shortcomings in dVET transfer research and practice: i) the predominance of a productivist vision of dVET; ii) the prevalence of a deficit view of dVET-adopting contexts; iii) a neglect of equity concerns; and iv) an absence of youth voice. In an effort to address some of these shortcomings and wrestle with the practicalities of policy change, colleagues and I secured funding to deliver a career orientation and network building co-design project with dual students and graduates in Merida, Mexico. Our findings demonstrated the potential of peer-to-peer organisation for promoting young people's rights within dual training structures and enhancing their personal and professional development (Vanderhoven et al., 2023). The undertaking also highlighted the significant challenges of attempting to foster youth collectivism outside of the typical dVET trade union channels (Langthaler and Top, 2023).

As such, the above body of work has served to cumulatively demarcate the research gap addressed by this thesis. Firstly, there is a paucity of research that interrogates a reliance on 'donor' models, parameters, and contexts as the basis of discursive and evidenced claims about the policy impacts of dVET, even when implemented in inter- and intra-categorically distinct LMIC contexts. Secondly, research in such contexts that combines rigorous empirical observation with critical theoretical development is only nascent and would benefit from substantial diversification and enrichment.

Thirdly, young people are rarely engaged as valued research informants and policy analysts in this endeavour, such that our knowledge base is undermined by its asymmetry towards institutional actors and priorities and contributes to adultist inequalities.

This thesis makes three primary original contributions in response to that gap. As a first contribution, the comprehensive synthesis of international organisations' grey literature presented in chapter two elucidates the universalised and globally-circulated assumptions about how apprenticeships function and what they can achieve, dVET being held up as their ideal iteration. This definitional task supports interrogation of the claims made about the policy's youth transition impacts, both in this thesis and wider research. It also links TVET-specific research interest in the policy transfer of (dual) apprenticeships to longstanding critical reflection on the knowledge work of IOs found in broader International and Comparative Education research. The second contribution is theoretical, demonstrating the conceptual value and empirical applicability of the Grammars of Youth framework (Bendit and Miranda 2017, Miranda and Corica 2018) for youth transitions research. Furthermore, refinements and expansions made in this thesis – including a new typology of grammars and diagrammatic representations – enhance the utility of the framework for analysing the contextual specificity of youth experience across diverse global settings. The third contribution is empirical, drawing on the expertise of young policy participants to generate contextualised insights about how the MMFD interacts with the broader youth transitions of dual students in Mexico. Beyond Mexico and the MMFD, this thesis offers vindication of the idea that the youth transition impacts of dVET in LMICs and the Global South warrant much greater empirical attention, mediated as they are by (intra-categorically diverse) contextual realities that have been under-considered in hegemonic (i.e. Northern) conceptions of the policy. This thesis exemplifies the value and one possible form of such empirical research.

1.3. Context: Mexico and the MMFD

Given this interest in examining dVET programmes in LMIC contexts that are products of international 'transfer' efforts, I turn now to why Mexico was selected as a case for such an endeavour and outline some of the contextual specificities that are particularly relevant to exploring dVET policy. Further contextual information is offered in sections 3.4 and 5.3.3 and woven throughout the three findings chapters (chapters seven to nine).

Mexico, or the United Mexican States, is an upper-middle-income economy and federal constitutional republic (World Bank, 2024a). The region operated under Spanish colonial rule from the early 16th century until the end of the protracted War of Independence that resulted in the 1821

Declaration of Independence. The dictatorship of Porfirio Díaz – known as The Porfiriato – lasted through the late 19th and early 20th centuries, and collapsed, less than a century after independence, into another protracted collection of conflicts known as the Mexican Revolution. This produced the current Constitution of Mexico, drafted in 1917, and ushered in profound changes in Mexico's cultural life and political organisation. This included the founding of the federal Secretariat of Public Education in 1921. The Institutional Revolutionary Party (PRI) emerged out of the new political leadership of the revolutionary period and held uninterrupted power from 1929 to 2000 (under a variety of party names before 1946). The PRI-fashioned ideology of 'revolutionary nationalism' leveraged the pain and the mythos of the Revolution (and its antecedents) to legitimise the existence of the seven-decade regime and construct a highly centralised apparatus of dictatorial control (Camín and Castañeda, 2009; Tuckman, 2012). Global economic and structural change through the final decades of the 20th century, and Mexico's related foreign debt crisis in the early 1980s, saw the national policy orientation shift from one of import substitution industrialisation and isolationism to one of state reduction and participation in global competition and markets (Camin, 2000; Morton, 2003). This new stance was, counterintuitively, justified under the same banner of revolutionary nationalism (Camín and Castañeda, 2009; Tuckman, 2012). However, the resultant reduction of the state's (i.e. the PRI's) reach also resulted in inevitable fragmentation of political power (Camin, 2000), and, in 2000, Vicente Fox of the National Action Party was elected president, breaking the PRI's hegemonic rule and signalling a period of (potential) democratic transition (Tuckman, 2012).

Constituted of 31 states and the federal entity of Mexico City, the country houses enormous cultural, linguistic, environmental, and economic diversity. It is also the site of stark and persistent inequalities (Camin, 2000; Krozer and Moreno-Brid, 2014). Indeed, despite having experienced very substantial reductions in poverty and improvements in living standards in recent decades (World Bank, 2024b), Mexico still contends with profound challenges related to deprivation, access to services, political accountability, and violence that are inequitably experienced by region and by social position (Delajara et al., 2022; Frías, 2008; Morán and Nevárez, 2021; Scott et al., 2018; Tuckman, 2012). This history of colonial rule, political instability, and economic change generates contextual conditions that are markedly different from those in which DACH dVET systems operate (Gonon, 2014; Hummelsheim and Baur, 2014). As a further example, Mexico's large informal economy reaches into all aspects of life and is a foundational source of activity and survival for the majority of Mexican households (Data-México, 2024; Giglia, 2014; Rojas-García and Toledo González, 2018).

The history of Mexico's experimentation with dual models and cooperation with Germany dates back to the 1960s (SEP, 2022). This was initially confined to extremely limited interventions implemented in German multi-national corporations with production sites in Mexico. By the 1990s, the *Colegio Nacional de Educación Profesional Técnica* (CONALEP) became the first state educational institution to host dual programmes (again, at a very limited scale) (SEP, 2022). In 2013, following further diplomatic and cooperation activities, the MMFD was launched as the first national dual pilot in 11 Mexican states, directly inspired by the German dual system and partially financed by the German state (Cervantes et al., 2021; López-Fogués et al., 2018; SEMS, 2017; SEP, 2022). In 2015, the model was further institutionalised and expanded to four additional educational sub-systems, supported by further German financing (DOF, 2015; SEMS, 2015). For the purposes of this thesis, the policy is referred to by its original name of the MMFD, however, it is now known as the Dual System of Education (SEMS, 2022; SEP, 2022).[4]

Considering these histories of national politics, social change, and bilateral cooperation, the MMFD represents a highly pertinent case of dVET policy transfer for investigation. Indeed, Mexico comprises many contextual features relevant to the functioning of apprenticeships and the wider skill system that are often common to LMICs and differ from dVET 'donor' countries and high-income dVET 'recipients' (taking care here to parse out why LMIC is a relevant category for attention; Lencucha and Neupane, 2022). These include high rates of informal economic activity, limited welfare state provision and restricted state resources, youthful populations, high indices of poverty and inequality, vulnerability to environmental and health crises, and legacies of colonisation that continue to be reflected through inequitable structures of global trade and finance (Allais, 2020; Brown, 2022; Cooper et al., 2019; Kohrt et al., 2019; Quijano, 2000). Indeed, the term Global South is used interchangeably with LMIC at points in this thesis in order to capture both the material and *geopolitical* inequities that often disadvantage these regions of the world and favour the high-income, Global North countries that are the progenitors of dVET, and, for that matter, most apprenticeship reference models (Dados and Connell, 2012; Mayer, 2001).

Turning now to the detail of the MMFD as a policy, it is useful to contextualise its place within Mexican public education, notwithstanding the significant heterogeneity of this federal system (Hernández Fernández, 2016). As seen in Figure 1, the system consists of preschool followed by

[4] These continuous reforms to dual education have led to important scaling and policy change in recent years (e.g. SEP, 2022). When discussing the detail of the MMFD, I present the features of the policy as were in 2020 (when participants were enrolled), rather than their current state, to ensure coherence with the data and analysis of this research project.

three levels of compulsory schooling: primary, secondary, and upper secondary (INEE, 2013).[5] The MMFD sits at the upper secondary level, in which there are dozens of sub-systems/providers, some overseen by the Secretariat of Public Education (SEP), others by state or national universities. The upper secondary level contains three educational streams: general and technical baccalaureates being oriented towards higher education entry, and the professional technical baccalaureate and its equivalents being oriented towards labour market entry (INEE, 2013). The largest provider of professional technical education is CONALEP, which hosted all MMFD programmes during the 2013 pilot stage (López-Fogués et al., 2018; SEP, 2022). The model has since been institutionalised and spread to all sub-systems offering professional technical and technological baccalaureates (DOF, 2015; SEP, 2022). Despite the labour market orientation of the professional technical stream, 1998 reforms to CONALEP allow for onward progression to higher education (Villa Lever, 2010).

Students over 16 years of age enrolled in a participating sub-system are eligible to enrol in a dual training programme from the third semester of upper secondary (grade 11) up until the fifth semester (start of grade 12) – i.e. active dual training lasts between one and two years, although the preparatory 1-2 years spent wholly on campus is considered part of a complete dual education of three years (DOF, 2015). Participation in dual transfers students from the predominantly school-based modality of regular baccalaureates to a predominantly work-based modality delivered in host firms. Students cannot be in the workplace for more than 40 hours per week (including 1 hour per day for self-study) and must remain in continuous contact with school campuses and theoretical learning by way of a digital learning platform, and (often but not always) some element of in-person teaching (e.g. at weekends or in blocks at the start of each semester) (DOF, 2015).

[5] Upper secondary education was made compulsory nationally in 2012 (Roldán Vera and Robles Valle, 2020).

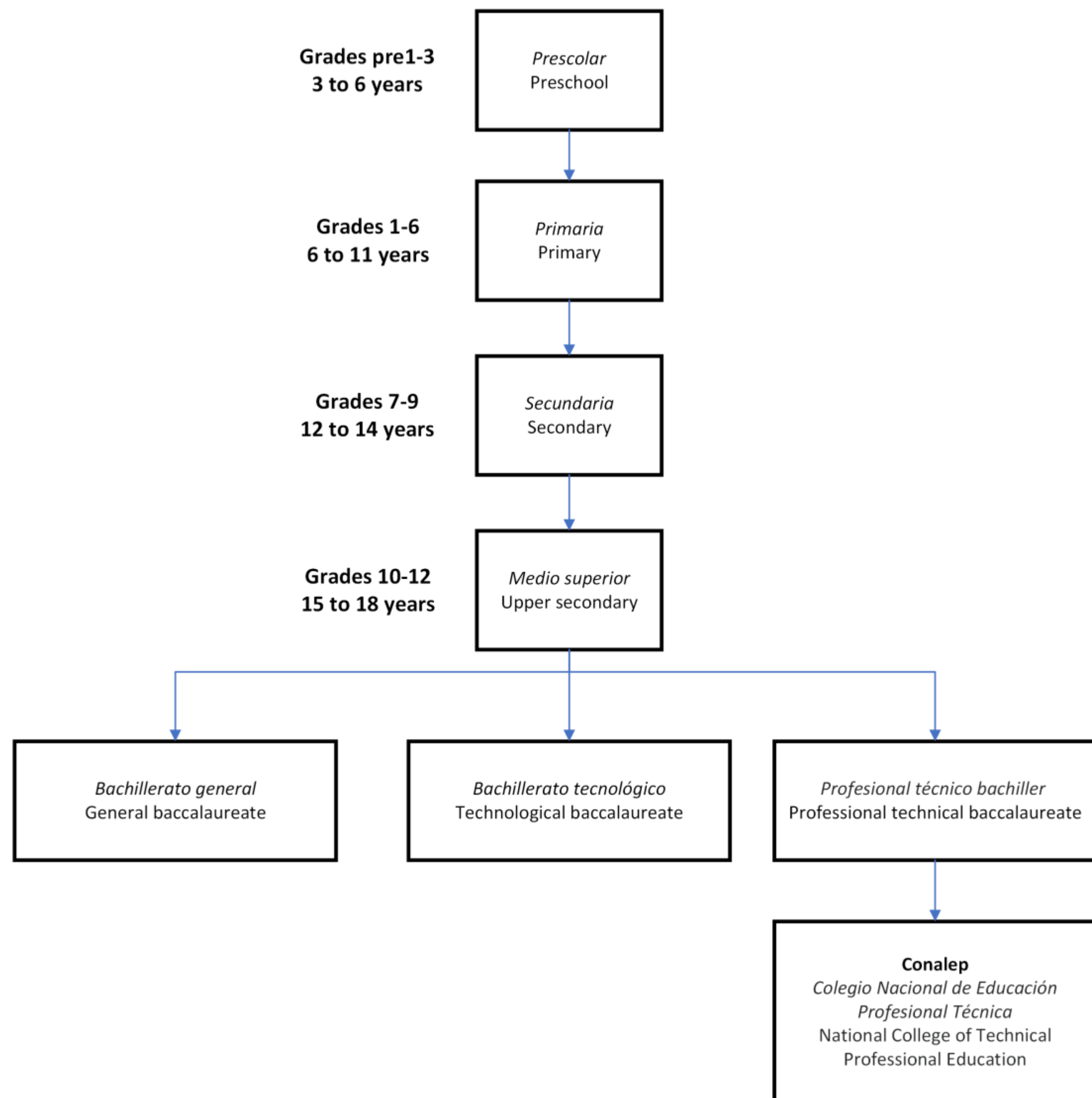


Figure 1. Overview of Mexican public education system, including upper secondary pathways[6]

State education authorities, educational sub-systems and schools are given substantial discretion in how they organise dual training programmes.[7] However, the 2015 agreement (DOF, 2015) stipulates some broad parameters regarding dual training programmes, including: individual training and rotation plans developed by schools and firms in line with national standards for upper secondary education should be followed and monitored in the workplace and school; schools and host firms should ensure they have the (unspecified) resources and infrastructure needed to deliver dual training; schools should implement systems of supervision and evaluation to monitor dual training delivery in both learning environments; host firms should have instructors who have been trained and certified to deliver dual training; and host firms should have collaboration arrangements with an articulating organisation for the business sector (e.g. chamber of commerce). Furthermore, a

[6] Note that ages indicated in Figure 1 are approximate. In reality, each level of the system accommodates children older than indicated due to delayed educational entry and repeated years.
[7] Specific features of MMFD policy in the study sites are discussed in chapters seven to nine.

number of rights and responsibilities should be enshrined in formal agreements (*convenios*) signed by students, schools, employers, and parents if students are under 18, which include: the training timetable (including holidays and weekly working hours); the student's rotation plan; the criteria and procedures of supervision and evaluation; and, where applicable, the forms of support (whether financial or in-kind) that a student will receive during their training.

While these broad stipulations have remained in place, the MMFD has been subject to political change and renegotiation. The policy was established in 2013 under the centre-right PRI administration led by President Enrique Peña Nieto. The change of administration in 2018 to President Andrés Manual López Obrador and the left-wing party Morena required renegotiation of the terms of dual training and produced changes in policy structures (SEP, 2022). Notably, dual students had previously been in receipt of a state-funded 2,000 MXN monthly scholarship (SEMS, 2017). From 2019, this was removed and a universal upper secondary scholarship (i.e. for all streams and modalities) of 920 MXN per month – the Benito Juárez Universal Scholarship for Wellbeing – was introduced to promote continuity and completion (Gobierno de México, 2019). In June 2019, a further memorandum of understanding was signed between Mexico and Germany to intensify cooperation in the field of TVET, as substantial dual expansion was sought (SEP, 2022). In September that same year, the General Law of Education was published, article 45 of which formalised the place of dual education within the technological and professional technical streams of upper secondary education (DOF, 2019).

Despite these various activities, and substantial expansion from the initial cohort of a few hundred students nationally, the dual system remains small: in a country of 126 million people (Data-México, 2024), 16,811 young people had participated in dual training by February 2022, 10,319 of which trained through CONALEP (SEP, 2022: 10-11). Nonetheless, dual education remains an important policy in the political landscape of Mexican education and is the nexus of significant diplomatic collaboration between Mexico and Germany (SEP, 2022).

1.4. Research aim, objectives, and questions

Thus, Mexico and the MMFD offer a fruitful study context in which to address the paucity of research examining dVET programmes in LMIC contexts discussed in section 1.2. Further considering the historic lack of attention to young people's training experiences and outcomes, the overarching aim of this thesis is *to understand the impacts of transferred dVET programmes on the youth transitions of students in LMIC contexts*.

This aim is broken down into three research objectives (ROs) connected to five clusters of research questions (RQs), informed by the chosen Grammars of Youth framework (Miranda and Corica, 2018). Drawing out the interest in youth transitions within this aim, RO1 is *to understand and explain the contextually embedded nature of youth transition processes for MMFD participants*, posing the following research questions:

> **RQ1.** Which Grammars of Youth are most relevant to the transitions of MMFD participants in Coahuila, Mexico? Why and how do these grammars manifest? How and why do they develop over time?
>
> **RQ2.** What youth pragmatics do young people employ in navigating their youth transitions, including in relation to the identified grammars? How and why do these develop over time?
>
> **RQ3.** How do these grammars and youth pragmatics interact with MMFD policy features to impact youth transitions? How and why does this develop over time?

Building on RQ3 and drawing out the focus on policy/programme design within the research aim, RO2 is *to identify means of improving the youth transition impacts of the MMFD*, posing the following research question:

> **RQ4.** In light of the grammatical context in which young people live, how might MMFD policy features be altered to make dual training more equitable and effective for young people in transition?

Finally, recontextualising this localised policy example within global processes of policy transfer and reflecting on the geopolitical specificity of LMIC contexts, RO3 is *to contribute to global debates and understandings of apprenticeship/dVET policy transfer*, posing a final cluster of research questions:

> **RQ5.** How do the transition experiences and outcomes of MMFD participants compare to those discursively depicted within the global apprenticeship agenda? To what extent do these contest or reinforce global policy norms about the effects of apprenticeships?

1.5. Structure of the thesis

To address these aims, objectives and questions, the thesis is structured in the following manner:

Chapter two summarises the results of a semi-systematic review (Snyder, 2019) of grey literature on apprenticeships produced by leading international organisations in the global education policy field. The review assists in defining the discursive contours of ‘apprenticeships’ as a globally salient policy idea of growing popularity. Indeed, in this chapter and the accompanying journal article (Vanderhoven, 2023), I argue for the conceptual utility of the ‘global apprenticeship agenda’ as a

way of understanding this coordinated and systemic policy interest. This chapter thus outlines the 'global' policy referred to in the title of this thesis.

Chapter three narrows its attention to dVET as a specific form of apprenticeship policy and turns to a review of the academic literature. As relates to the international transfer of dVET models, I argue that extant research in LMIC contexts would benefit from greater critical theorisation, empirical reinforcement, and the inclusion and amplification of youth perspectives. I therefore explore the longstanding tradition of empirical youth transitions research within the broader TVET field as a fruitful means of addressing these shortcomings.

Chapter four continues this discussion of youth transitions research, pivoting from the empirical to the theoretical. A high-level overview of conceptual approaches to the sociology of youth transitions provides a basis for orienting my chosen analytical framework – the Grammars of Youth – in relation to structure-agency debates. I then outline the analytical considerations precipitated by the aim and objectives of this research project and demonstrate the utility of the Grammars of Youth framework in satisfying those considerations.

Chapter five explores how this analytical framework is operationalised as part of the broader methodology. First, I outline the theoretical groundings of this research as relate to ontology, epistemology, and the chosen qualitative longitudinal research design. Continued presentation of the research design first demarcates the original contribution of this doctoral project, then details sampling techniques (including justification of the chosen study site of Coahuila), ethical considerations, interview methods, and the approach to data analysis.

Chapter six provides a signpost to the proceeding findings chapters, explaining the rationale behind the organisation of the analysis and the proposed typology of subjective, temporal, and locational grammars. Information is also provided regarding participants' profiles to further contextualise the data extracts presented in chapters seven to nine.

Chapter seven presents analysis of the findings as relate to subjective grammars. The intersecting grammars of gender and social class are discussed in relation to accessing the MMFD, the MMFD experience, and MMFD outcomes, demonstrating the temporally constituted process of navigating 'vital conjunctures' and broader youth transitions.

Chapter eight presents analysis of the findings as relate to temporal grammars. The grammar of the Covid-19 pandemic is similarly discussed in relation to MMFD experiences and outcomes in order to explore the evolving and cohort-defining effects of this global health crisis.

Chapter nine presents analysis of the findings as relate to locational grammars. This discussion is organised according to the three identified grammars of the surrounding educational ecosystem, opportunities for youth collectivism, and Mexican neoliberalism and the global political economy.

Chapter ten returns to the research objectives and questions and addresses them in turn. First, I reformulate the findings related to RQs1-3 through the frame of the youth pragmatics identified in chapters seven to nine, which cut across overlapping grammars and help to reveal the temporally constituted relationships between the two levels of the analytical dualism. Second, I address RQ4 and discuss policy means of making the MMFD more effective and equitable. Thirdly, I reinsert the 'local' policy case of the MMFD into its global context of international policy transfer, scrutinising the discursive claims of the 'global apprenticeship agenda' explored in chapter two and considering the dialectical relationship between the global policy idea of apprenticeships – of which dVET is the 'gold standard' – and the MMFD as a local dVET policy iteration. To conclude, I outline the original contributions and limitations of this research and suggest future avenues of enquiry.

2. Grey literature review: the apprenticeship discourses of international organisations

2.1. Introduction

As outlined in the introduction, dual models of vocational education and training (dVET), and apprenticeships more broadly, have become an important object of global policy interest and transfer (Akoojee et al., 2013; Gonon, 2014; Valiente and Scandurra, 2017). As part of this, international organisations operating in the global education policy field have become instrumental actors in the promotion and dissemination of apprenticeship policy models (Axmann and Hofmann, 2013b; Klassen, 2024; OECD, 2012). Despite the growing relevance of apprenticeships, and the crucial role of IOs in their promulgation, limited analytical attention has been directed to the nature and content of IOs' discourses on the topic. One portion of the critical literature has compared different IOs' role in generating global policy norms such as the 'global knowledge economy' and the youth unemployment crisis (e.g. Fergusson and Yeates, 2014; Livingstone, 2012). Another has dealt with how technical and vocational education and training (TVET) and 'skills promotion' have been presented as the solution, mainly limiting analysis to one IO at a time (Galguera, 2018; Ngcwangu, 2015; Valiente, 2014; for an important comparative exception see Klassen, 2024). Comprehensive and comparative mapping of IOs' discourses on apprenticeships is, however, a notable research gap, and one which it benefits this thesis to address. These discourses set and reflect a coalescing global understanding of why apprenticeships are needed, what they can achieve, and why they are likely to be successful (Fuller and Unwin, 2011). That understanding can in turn generate and legitimise national/regional/local interest in apprenticeships, including dVET, as a salient policy solution. As such, understanding the global policy idea of 'apprenticeships' provides a crucial backdrop to analysing how implementation of the Modelo Mexicano de Formación Dual (MMFD) has unfolded in its own specific context.

This chapter summarises the results of a semi-systematic review (Snyder, 2019) of grey literature discussing apprenticeships produced by five IOs active in the global education policy field, addressing the following questions:

1. What discourses about apprenticeship policy are articulated in the grey literature of IOs working in the global education policy field?
2. What specific and shared arguments exist among IOs, and can these be said to constitute a global agenda to promote apprenticeships?
3. If so, what are the features of such a 'global apprenticeship agenda'?

The detailed methodology and findings of the review are presented in an article in *Globalisation, Societies and Education* (Vanderhoven, 2023), to which readers are directed if they wish to learn more about the review process and results. To avoid duplication, this chapter primarily focuses on a synthetic discussion of the findings and their implications for this thesis. As such, the following section briefly outlines the analytical framework employed and aspects of the methodology not discussed in the complementary journal article. I then continue directly to discussion of the findings in tandem with wider academic literature, considering the shared and specific aspects of each organisation's position and advocating for the conceptual utility of a 'global apprenticeship agenda'. Finally, I conclude by discussing the relevance of these findings for the international academic literature and for the primary project of this thesis: analysing young people's experiences of the MMFD.

2.2. Analytical framework and methodology

This chapter frames the discursive and ideational work of international organisations as a relevant and pertinent object of enquiry for deepening our analysis of policies, such as the MMFD, that are the product of international cooperation and policy transfer (Cervantes et al., 2021; López-Fogués et al., 2018). As such, I draw on Niemann, Martens, and Kaasch's (2021: 17-18) description of IOs' 'discursive process' of policy development to develop a framework for comparing their apprenticeship discourses. First, a problem in need of a solution is defined *(rationale)*, i.e. the accounts IOs give of *why apprenticeships are needed*. Second, desired future outcomes are imagined *(goals)*, the achievement of which signals alleviation of the identified problem, i.e. *what outcomes are apprenticeships intended to achieve?* Third, particular realm(s) of intervention are identified as arenas for action *(orientations)* and a means of addressing the problem is selected (in this case, apprenticeships). As such, *orientations* refer to *the sectors/realms of intervention and policy paradigms in relation to which apprenticeships are framed*. Finally, this discursive process is interwoven with *theoretical underpinnings,* which are *the assumptions that generate and support the chosen conception of apprenticeships*, including any theories of change or causal mechanisms relied upon to link rationales, goals, and orientations. Such theoretical assumptions are not always made explicit (Tikly, 2013) and are often presented as naturalised truths, when, in fact, a whole host of mitigating circumstances and unintended consequences may interrupt, divert, or invalidate causal chains.

For the purposes of selection and comparison of documents and discourses, a definition of apprenticeship is also needed. Taken to be formal TVET programmes that feature a contractual relationship between apprentices and employers or training institutions, apprenticeships entail

significant and relatively long-term work-based learning provided by employers, (often but not necessarily) combined with off-the-job vocational education (Axmann and Hofmann, 2013a; Steedman, 2012). Such training programmes are concerned with 'learning for an intermediate occupational skill (i.e., more than routinised job training), and […] are subject to externally imposed training standards' (Ryan et al., 2010: 5). For the purposes of this review, the definition of apprenticeships therefore does not include 'traditional' (Adams, 2008) or 'informal' (ILO, 2011) apprenticeships based on an ad hoc training arrangement with an individual craftsperson. Growing interest in 'upgrading' informal apprenticeship systems, particularly in Sub-Saharan Africa (e.g. ILO, 2011) is a notable policy phenomenon, however, this involves a different set of policy mechanisms and is beyond the scope of this review.

A semi-systematic approach to reviewing the grey literature was selected to balance the competing interests of comprehensiveness and feasibility and to facilitate conceptual inclusiveness (Snyder, 2019). While the definition of apprenticeship outlined above would be one that is widely accepted, there are many programmes given the name of 'apprenticeship' that might not satisfy these parameters and there are others which might possess many of these features but not be explicitly and exclusively discussed under the heading of 'apprenticeship'. Therefore, the malleability of a semi-structured approach left room for this to be considered in the selection of relevant documents (Snyder, 2019). In addition, a semi-structured approach supported the generation of a comprehensive, if not exhaustive, overview of the area of study. Organisational sampling was informed by Niemann and Martens' (2021) mapping of the global education policy space, identifying six relevant IOs.[8] Of these six, UNICEF and UNHCR were excluded as they do not have an active focus on TVET. Although a regional body, the European Union (EU) was added given its particular interest in apprenticeships (Valiente et al., 2020a) and its policy influence beyond Member States (Fargion and Mayer, 2015). As such, the final sample of five IOs comprised: the United Nations Educational, Scientific and Cultural Organisation (UNESCO); the International Labour Organisation (ILO); the Organisation for Economic Cooperation and Development (OECD); the World Bank; and the EU (specifically, the European Commission and TVET-specialist agencies; the European Centre for the Development of Vocational Training [Cedefop] and the European Training Foundation [ETF]). Given a comprehensive organisational sample, it was not deemed necessary to be equally exhaustive in the selection of documents. Instead, following a structured process of document search and filtering conducted in July 2020 (see Table 1), a purposive sample of up to ten documents per organisation were selected for extraction and analysis (n=40). The aim in selecting documents was to reach theoretical saturation, mirroring approaches to primary qualitative data

[8] UNESCO, World Bank, OECD, United Nations Children's Fund (UNICEF), ILO, United Nations High Commissioner for Refugees (UNHCR) (Niemann and Martens 2021: 172).

collection and analysis (Mackenzie et al., 2013; Snyder, 2019). Table 1 summarises the systematic search process and lists the final papers selected for extraction and analysis, each with a unique referencing identifier (see Vanderhoven, 2023 for a detailed explanation of this process).

Table 1. Summary of grey literature review document selection process

<table>
<tr><th colspan="2"></th><th>EU</th><th>ILO</th><th>OECD</th><th>UNESCO</th><th>World Bank</th></tr>
<tr><td colspan="2">Databases searched</td><td>Cedefop publications database & policy documents and studies database

ETF publications database

European Commission publications database

Skills Panorama resources database</td><td>ILO publications database</td><td>OECD iLibrary</td><td>UNESCDOC Digital Library

UNESCO-UNEVOC publications database</td><td>World Bank research and publications database</td></tr>
<tr><td colspan="2">Publications, key word search</td><td>831</td><td>407</td><td>115</td><td>119</td><td>322</td></tr>
<tr><td colspan="7">Filter 1</td></tr>
<tr><td colspan="2">Publications retained</td><td>56</td><td>36</td><td>37</td><td>14</td><td>9</td></tr>
<tr><td colspan="7">Filter 2</td></tr>
<tr><td colspan="2">Publications retained, total</td><td>38</td><td>23</td><td>30</td><td>6</td><td>4</td></tr>
<tr><td rowspan="4">by year</td><td>Pre-2009</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>2009-2012</td><td>5</td><td>6</td><td>12</td><td>2</td><td>1</td></tr>
<tr><td>2013-2016</td><td>17</td><td>5</td><td>7</td><td>3</td><td>1</td></tr>
<tr><td>2017-2020</td><td>16</td><td>12</td><td>10</td><td>0</td><td>2</td></tr>
<tr><td colspan="7">Purposive sample</td></tr>
<tr><td colspan="2">Selected publications, n</td><td>10</td><td>10</td><td>10</td><td>6</td><td>4</td></tr>
<tr><td colspan="2">Selected publications, citations</td><td>EU01 (Cedefop, 2014a)
EU02 (Cedefop, 2014b)
EU03 (Cedefop, 2015)
EU04 (Cedefop, 2018)
EU05 (Cedefop, 2020a)
EU06 (Cedefop, 2020c)
EU07 (Cedefop and ETF, 2018)
EU08 (Cedefop and ETF, 2020)
EU09 (European Commission, 2012)
EU10 (European Commission, 2015)</td><td>ILO01 (Aggarwal, 2020)
ILO02 (Axmann and Hofmann, 2013b)
ILO03 (ILO, 2012)
ILO04 (ILO, 2017)
ILO05 (ILO, 2018)
ILO06 (ILO, 2019a)
ILO07 (ILO, 2019b)
ILO08 (ILO, 2020)
ILO09 (ILO and OECD, 2014)
ILO10 (Steedman, 2012)</td><td>OECD01 (Bajgar and Criscuolo, 2016)
OECD02 (Jeon, 2019)
OECD03 (OECD, 2010)
OECD04 (OECD, 2012)
OECD05 (OECD, 2014)
OECD06 (OECD, 2015)
OECD07 (OECD, 2016)
OECD08 (OECD, 2018)
OECD09 (OECD and ILO, 2011)
OECD10 (OECD and ILO, 2017)</td><td>UNESCO01 (Molz, 2015)
UNESCO02 (Subrahmanyam, 2013)
UNESCO03 (UIS and UNESCO-UNEVOC, 2006)
UNESCO04 (UNESCO, 2012)
UNESCO05 (UNESCO, 2016)
UNESCO06 (UNESCO-UNEVOC, 2010)</td><td>WB01 (Sanchez Puerta et al., 2015)
WB02 (World Bank, 2012)
WB03 (World Bank, 2017)
WB04 (World Bank, 2018)</td></tr>
</table>

2.3. Summary and discussion of key findings

Findings suggest that a substantial portion of the rationales, goals, and orientations ascribed to apprenticeships are shared by all five IOs under study (see Table 2).[9] Apprenticeships are framed as a salient response to economic crises (OECD08; UNESCO02; WB02), imbalances in the skills system (EU09; ILO02; UNESCO03; WB02), the growing importance of the global knowledge economy (EU04; ILO04), and persistent quality issues in school based TVET systems (UNESCO02; WB04). They are purported to drive forward economic growth (EU01; ILO06; UNESCO01; OECD07; WB02), improve crisis resilience (EU02; ILO08; OECD10), and (excepting the World Bank) foster socio-economic inclusion and cohesion (EU07; ILO09; OECD05; UNESCO04). Indeed, the very limited presence of publications prior to 2009 (see Table 1), and a progressive proliferation up to 2020, point to the Global Financial Crisis (GFC) as a catalyst for increasing interest in apprenticeships. Thus, apprenticeships are oriented as part of a narrowing focus on education for employment and a revival of TVET as a path to (primarily economic) development. Underpinning these conceptions of apprenticeship policy is a shared deployment of Human Capital Theory (HCT) assumptions.

For the three most active and engaged proponents of apprenticeships (EU, ILO, and OECD), this is further combined with Institutional Political Economy (IPE) principles (e.g. EU03, 06, 10; ILO02, 03, 05, 08; OECD03, 09). It is suggested that the state has a role to play in incentivising the participation and investment of firms and individuals, rather than leaving the skills system to market forces (EU02; OECD04, 05). Employers are meanwhile framed as responsible for offering high-quality training and participating in the associated costs. In exchange for this cost sharing, and in order to ensure the labour market relevance of training, employers are given a prominent role in shaping the skills system, their exploitative tendencies kept in check by an overseeing regulatory state (Robertson, 2010). There thus appears to be a clear and mutually reinforcing coherence between IPE as a theoretical position and apprenticeships as a policy solution: they entail robust systems of governance, collaboration, and oversight, coordinated by state institutions; they offer correction, but not disruption, of markets; and they focus on socio-economic integration of poor and other marginalised students (Novelli et al., 2014).

The discursive distinctions that do exist between organisations are perhaps not so rigid. Research highlights that these organisations occupy a fairly narrow 'global' policy space and that their fortunes and interests are deeply intertwined. The EU has sought to influence the direction of the ILO (Johnson, 2009), which in turn has influenced the operations of the World Bank (Hughes and

[9] For a more in-depth presentation of the findings in relation to each facet of the analytical framework, see (Vanderhoven, 2023).

Table 2. Comparative overview of IOs' discursive positions on apprenticeship policy

	EU	ILO	OECD	UNESCO	World Bank
Rationales					
Economic crisis	✓	✓	✓	✓	✓
Skills system imbalance	✓	✓	✓	✓	✓
Global knowledge economy	✓	✓	✓	✓	✓
TVET quality issues	✓	✓	✓	✓	✓
Social exclusion	✓	✓	✓	✓	
Degradation of work		✓			
Goals					
Economic development/growth	✓	✓	✓	✓	✓
Crisis resilience	✓	✓	✓	✓	✓
Socio-economic inclusion	✓	✓	✓	✓	
European integration	✓				
Labour market reform		✓			
Sustainable development				✓	
Orientations					
Education for employment	✓	✓	✓	✓	✓
TVET for development	✓	✓	✓	✓	✓
Institutional reform	✓	✓			
Sustainable development				✓	
Lifelong learning				✓	
Theoretical underpinnings					
Human Capital Theory	✓	✓	✓	✓	✓
Institutional Political Economy	✓	✓	✓		
Europeanisation	✓				
Labour/youth rights		✓			
Sustainable development				✓	
Capability Approach				✓	

Haworth, 2011). The European Commission has endorsed the OECD as a producer of education knowledge as its instruments are of use to the Commission's own work (Grek, 2014). Both the ILO and UNESCO are agencies of the UN and thus somewhat subordinate to its institutional goals. This is without mentioning the many conferences, research projects, and reports on TVET and apprenticeships that are the product of inter-organisational collaboration (e.g. ILO09; OECD05, 09, 10, WB03; Rauner and Smith, 2010; Smith and Kemmis, 2013; see also Larentes da Silva, 2022). As

examples of discursive flexibility, when partnering with the ILO, the OECD adopts an interest in decent work not seen in solo publications (ILO09) and when working jointly with the ILO, the World Bank countenances rare consideration of social inclusion and social justice goals for apprenticeships (Smith and Kemmis, 2013).[10]

This therefore suggests that the notion of a 'global apprenticeship agenda' is a useful way of characterising systematic interest in defining, promoting, and funding apprenticeship programmes in a variety of global contexts (Vanderhoven, 2023). All five IOs give the policy some meaningful treatment in publications and frequently in collaboration with each other, re-iterating a core set of shared discourses about apprenticeships' functioning and effects. However, the term 'agenda' is not intended to suggest uniformity or coherence to these collected discourses between or within organisations (Verger and Fontdevila, forthcoming). Indeed, distinct inflections to organisations' interest in apprenticeships remain, which challenge a totalising convergence narrative and point to the continued relevance of distinct institutional identities and priorities.

Firstly, there exist important points of difference between the three most active promoters of apprenticeship policy. The EU intertwines apprenticeships with the broader project of European integration, highlighting their potential contribution to the internal cohesion and global competitiveness of the continent (EU01, 02, 04, 07, 09; Dale, 2009; European Commission, 2020). The demands that apprenticeships produce for collaborative governance structures, supra-national information intermediaries, and private sector involvement in the design and funding of education are further reflective of economisation and centralisation trends within European education (EU01, 06, 07; Antunes, 2016; Martínez-Izquierdo and Torres Sánchez, 2022). This is reflected in the universal endorsement of apprenticeship expansion for Member States and candidate countries (Cedefop, 2016; ETF, 2017).

By contrast, the ILO foregrounds precarity and the degradation of work as reasons for its interest in apprenticeships (ILO08, 09). Apprenticeships are positioned as a means of producing labour market reform, helping to generate 'decent work' opportunities and institutional protections that shield young people and education from the exploitative tendencies of employers, thus contributing to a broader project of 'fair globalisation' (ILO02, 03, 05, 08; Hughes and Haworth, 2011; Maul, 2019). This results in a strong emphasis on robust regulation and 'social dialogue' (ILO02, 03, 04), i.e. negotiation and consultation between relevant partners, particularly regarding the rights, legal status, and working conditions of apprentices (ILO02, 03, 10). Given the ILO's lack of enforcement

[10] Noting that this publication was excluded from the main analysis for not being endorsed as representing the official stance of either organisation.

capacity as an organisation, it has always relied on a 'values-driven platform' (Johnson, 2009: 92) to encourage adoption of its guidance, reflected in its appeal to a rights-based perspective (ILO05, 07, 09). Thus, apprenticeships contribute to the ILO's flagship decent work agenda by purportedly promoting both economic development and higher-quality employment (ILO10), whilst also being cyclically legitimised by their association with the normative and legal values of decent work.

Finally, the OECD takes the narrowest focus on apprenticeships as an educational tool for economic development among the three strongest proponents of the policy (OECD01, 02). A continuing emphasis on institutional embeddedness and social inclusion aligns with the organisation's analytical expansion beyond HCT orthodoxy (Robertson, 2005; Valiente, 2014) as part of a post-Washington Consensus (Tikly, 2013; Robertson et al., 2007). Nonetheless, the OECD's primary framing of exclusion as an issue of economic inefficiency and 'untapped potential' belies a fundamental interest in apprenticeships as an educational route to an economic goal (OECD02, 06, 07, 09; Valiente, 2014). Indeed, as Valiente (2014) notes, the Directorate for Education and Skills must develop a case for skills development that appeals to the economic orientation of the broader OECD and justifies sustained funding for education in times of crisis (which HCT provides), whilst also taking market failures seriously and counteracting the neoliberal tendency to minimise state investment in education in the name of competition (as does IPE). Thus, apprenticeships make an excellent candidate for promotion by the Directorate, as they incorporate both a direct link to economic policy and a requirement for extensive collaborative governance, coordinated by the state.

In further evidence of inter-institutional variation, the World Bank and UNESCO appear to struggle to reconcile apprenticeships with their broader positions and are notably less active in their promotion (reflected in much smaller publication samples of n=4 and n=6 respectively). UNESCO's distinct focus on the humanistic and emancipatory aspects of education and TVET, as well as a consistent emphasis on sustainable development, typically set the organisation apart from its peers in the global education policy field (Elfert, 2017; Tikly, 2013; Vaccari and Gardinier, 2019). However, while the social and environmental benefits of TVET generally are referred to in the selected documents (UNESCO02, 03, 05, 06), the relationship between these currents of work and the specific case of apprenticeship policy is weakly articulated, UNESCO instead relying on many of the same economic arguments used by other IOs (UNESCO01). This begs the question of whether UNESCO sees apprenticeships as well-aligned with its distinct frameworks of lifelong learning, the capabilities approach (Nussbaum, 2011; Sen, 2005), and sustainable development. Regardless, apprenticeships continue to be promoted in UNESCO publications as an important means of smoothing school-to-work transitions, if suitably regulated (UNESCO, 2021).

Conversely, the World Bank appears ambivalent about the extensive governance structures and state intervention associated with apprenticeships (WB01), except when collaborating with the European Commission, for which this is much more of a priority (WB03). Compared with the other IOs under study, the Bank affords minimal attention to the institutional facets of apprenticeship systems, preferring to emphasise skills system 'optimisation' and light-touch regulation, and showing comparatively little interest in the social inclusion goals emphasised by other IOs (WB01, 02, 04). At first glance, this highly economistic view of apprenticeships appears out of step with the significantly expanded humanistic vision of education found in introductions to recent World Development Reports (WB03, 04). However, scholars have remarked that this grand rhetoric is largely superficial, belying a still very narrow set of neoliberal principles for understanding, designing, and evaluating education (Klees et al., 2019; Menashy, 2013; Ngcwangu, 2015). Poor alignment between such a stance and the dominant institutionalist arguments in favour of apprenticeships might explain the Bank's substantially sparser discursive engagement with the policy. Nonetheless, it should be noted that a current of discussion about apprenticeships is evident in the Bank's working papers (which are excluded from this synthesis [see Vanderhoven, 2023]; e.g. Almeida et al., 2012; Crépon and Premand, 2018), indicating that the policy has more of a place in internal thinking (even if as an object of critique) than suggested by the selected sample of officially-endorsed documents. Furthermore, the World Bank and UNESCO's lower levels of observed engagement may stem from excluding discussion of informal apprenticeships from the review parameters, as this 'upgrading' iteration of the policy is most commonly pursued in LMICs where the work of these organisations is concentrated.

Thus, the findings and literature suggest that much of the divergence between the five IOs' positions on apprenticeships can be traced back to their institutional legacies and identities. Whether as a result of influence from funders (Klees et al., 2012), the need to carve out a distinctive space in global policy debates (Johnson, 2009), a requirement to remain in step with the visions of their parent organisations (Galguera, 2018; Valiente, 2014) or, indeed, to maintain their own survival (Antunes, 2016; Vimont, 2017), IOs continually filter policies through their own histories, mandates and external pressures as they circulate around the globe. Indeed, the way in which a largely similar package of apprenticeship policy is made malleable to IOs' divergent discourses and priorities is notable (Fuller and Unwin, 2011). Apprenticeships thus act as a somewhat polysemic policy object, the discursive fringes of which can be bent towards the interests and identities of different IOs while maintaining a core set of foundational assumptions (Vanderhoven, 2023).

Nonetheless, in addition to the core features of the 'global apprenticeship agenda' previously discussed (see Table 2), the five IOs are united in their avoidance of a more structural critique of the social problems that apprenticeships are called upon to address. Inequality is primarily conceived

as an issue of economic exclusion, and labour market integration thus becomes the main axis of intervention and parameter of success. Processes of social reproduction and discrimination within apprenticeship systems (Chadderton and Wischmann, 2014; Maitra and Maitra, 2021; Protsch and Solga, 2016) remain largely unaddressed and gaining access to an apprenticeship is often treated as an implied end to marginalisation (for a notable exception see UNESCO04). As a striking example, on a rare occasion that inequalities in *return* on investment according to sex and race are explored in one ILO publication (thereby hinting at the possibility of structural discrimination and injustice), this is dismissed as resulting from women's 'choice' to pursue 'stereotypical women specific occupations, despite the current government efforts' (ILO, 2019a: 5). Thus, apprenticeships are presented as a panacea to structural problems (Chankseliani et al., 2017), while sidestepping a more structural critique of where the origins of those problems lie. Indeed, one policy, which remains limited in its scale and coverage (UNESCO, 2021), is charged with an almost impossibly lengthy and diverse list of expectations to satisfy. In the process, poorly aligned systems of skill supply and demand and the 'inadequate' skill profiles of young people are identified as the primary causes of youth unemployment and exclusion, individualising responsibility for change and transforming a set of systemic, societal issues into a seemingly straightforward technical task (Valiente et al., 2020a).

Furthermore, there is a paucity of attention to the possible personal, emancipatory outcomes of apprenticeships for young people – as identified for other forms of TVET (Tur Porres et al., 2014). This is even true for UNESCO, usually the strongest proponent of such a perspective in the global education policy field (Tikly, 2013; Vaccari and Gardinier, 2019). Thus, for this collective of IOs, apprenticeships are understood as an economic investment for individuals and societies, deriving the majority of their value from potency in the labour market, measured using youth unemployment rates. In essence, the more expansive humanistic functions of TVET and, indeed, the idea of education as an end in itself is largely removed from discussion of apprenticeships (Spiel et al., 2018; Valiente, 2014), with social goals framed in terms of 'decent' employment prospects or collective social cohesion benefits. Arguably, even these social outcomes are ultimately intended to serve overarching governing structures (whether local, national, or supranational) that benefit from political stability and reduced welfare demands.

2.4. Conclusions

What, then, is the relevance of these findings for the international academic literature and the remainder of this thesis? Analysis of discourses within the 'global apprenticeship agenda' demonstrates a core and almost de facto understanding of what apprenticeships are for and what they will achieve. These conceptions are presented in a universal fashion, the underlying causal

assumptions being presumed to unfold in a largely reliable way across the world. As such, 'apprenticeships' are fashioned into a global policy idea and object; one that can be transported and implemented across diverse contexts. By tracing the contours of that object with greater clarity, it is possible to interrogate the extent to which those assumptions are borne out in reality. This thesis therefore sets out (in part) to examine whether the discourses contained within the 'global apprenticeship agenda' are challenged or reinforced by the implementation and outcomes of the MMFD – an apprenticeship model which was explicitly inspired by the 'gold standard' German dual system and which was the product of international cooperation at a time of ever-growing global interest in apprenticeship policy (Cervantes et al., 2021; López-Fogués et al., 2018).

Furthermore, analysis of the 'global apprenticeship agenda' has demonstrated a paucity of attention to how inequality functions within apprenticeship programmes. This is despite the well-established evidence that even the 'gold standard' dual systems reinforce, if not actively contribute to, social inequalities of different kinds (Chadderton and Wischmann, 2014; Haasler and Gottschall, 2015; Protsch and Solga, 2016). As evidenced in this comparative analysis, interest in apprenticeships appears largely motivated by the macro-economic benefits they are purported to deliver. Despite individual young people being the embodied enactors of this supposed cumulative benefit (largely through smooth labour market integration), this directs attention away from the experiences and outcomes that diverse populations of young people, spread across hugely varied international contexts, are able to derive from their participation in apprenticeships. Thus, this thesis positions young people's accounts of their transitions through and beyond apprenticeship programmes – in this case the MMFD – as an ideal means of interrogating the credibility of claims made within the 'global apprenticeship agenda' and redirecting attention to still-neglected questions of educational equity.

3. Academic literature review: dVET policy transfer and youth transitions in TVET

3.1. Introduction

The previous chapter explored how apprenticeships are presented in international organisations' grey literature and argued for the concept of the 'global apprenticeship agenda' as a relevant means of engaging with concerted and coordinated interest in this policy solution. This next chapter turns to the academic literature and narrows its focus from apprenticeships broadly to dual models of vocational education and training (dVET) specifically. Within the context of such a 'global apprenticeship agenda', dVET is often held up as the 'gold standard' of apprenticeship models and has been the object of considerable policy transfer activity and associated research scrutiny (DC dVET, nd; Fontdevila et al., 2022; Gonon, 2012; Langthaler, 2015). Thus, the first section of this chapter reviews academic research on dVET policy transfer, finding a paucity of research which examines the effects of 'transferred' dVET programmes on youth transitions in diverse contexts. The second section therefore reviews existing research from the wider field of technical and vocational education and training (TVET) that has focused on youth transitions. Based on this overview, I suggest fruitful means of exploring the experiences and outcomes of participants in the Modelo Mexicano de Formación Dual (MMFD). I conclude by arguing that exploring the MMFD through such a lens can help address current gaps within the dVET transfer literature and enrich the long-standing tradition of youth transitions research within the TVET field.

3.2. dVET policy transfer

Broadly understood as a model of apprenticeship that offers a relatively balanced and continuous combination of learning in the school and workplace, regulated and financed under 'principles of social partnership between capital, labour and the state' (Valiente and Scandurra, 2017: 43), dVET typically finds its reference model in the dual systems of DACH countries Germany, Austria, and Switzerland (i.e. dual model vs. dual system as specified by Gonon, 2014). In these contexts, 'dual' vocational education has much greater and deeper significance as part of a corporatist, collective skill formation system (Busemeyer and Trampusch, 2012; Martínez-Izquierdo and Torres Sánchez, 2022). 'Dual' speaks not only to a carefully coordinated learning experience between school and workplace, but also a complex arrangement of inter-institutional collaboration between the state, employers, and social partners, which produces rigorous occupational standards and certification processes and is based on high levels of mutual commitment to the training ecosystem and robust

social dialogue (Deissinger, 2015; Hummelsheim and Baur, 2014; Langthaler, 2015; Wieland, 2015). It even extends to fostering a 'dual' mentality among trainees, all based on a longstanding and culturally-embedded understanding of the nature of work, vocation, and professional identity (Lewis, 2007b; Mayer, 2001). There is a large body of research that examines dual apprenticeships in these contexts, but the aim of this review is not to offer a comprehensive understanding of these DACH reference models. The Mexican iteration of the policy, while inspired by elements of the German model and developed with support from German cooperation actors (Cervantes et al., 2021; López-Fogués et al., 2018), is a distinct policy that responds to local contextual conditions. Indeed, colleagues and I have suggested that the MMFD is an example of a new hybrid model of dVET combining state-led governance with dual training delivery (Vanderhoven et al., 2022).

Where the DACH models do come into sharper focus is in understanding dVET as a transfer commodity and purported tool for development (Li and Pilz, 2021). Capitalising on their reputation for economic success and the widespread claim that their apprenticeship systems helped DACH countries weather the GFC (despite a lack of evidence supporting the claim that dVET is any more effective in tackling youth unemployment than school-based TVET: Valiente et al., 2020a; Wolter and Ryan, 2011), Germany, Austria, and Switzerland have all engaged in bilateral cooperation activities to package and export dual models (DC dVET, nd; Fontdevila et al., 2022; Gonon, 2012; Langthaler, 2015). These activities of course coincide with, and are bolstered by, the work of international organisations discussed in chapter two. As such, there is a body of research that specifically addresses dVET within this context of policy transfer and cross-national attraction (Li and Pilz, 2021).

One portion of this literature is heavy in its focus on implementation and institutional sustainability. From a donor perspective, research often seeks to understand the barriers and successes encountered during attempts to implement dual apprenticeships in new contexts (e.g. Barabasch et al., 2009; Deissinger, 2015; Gessler, 2017). Based on this, suggestions are made as to what elements or principles of dVET might form the object of sustainable transfer efforts (e.g. Euler, 2013; Münk, 2017; Wilson, 2000). Relatedly, one seam of academic work emanating from countries looking to adopt dVET either makes the case for policy import or makes suggestions for ensuring that local iterations conform as much as possible to the original model (e.g. Asghar and Hafeez Siddi, 2008; Ayeni, 2015; Dudyrev et al., 2018; Heriot, 2016).

An alternative current of work takes a somewhat more critical approach to the phenomenon of dual policy transfer. This includes disrupting the unquestioned status of DACH dual systems as blueprints for emulation. While it might be broadly accepted that copy-paste transfer is not possible (Li and

Pilz, 2021), there still exists a pervasive assumption that these 'donor' models are largely well-functioning and of unquestioned merit (Gonon, 2014; Vanderhoven et al., 2024; forthcoming). This is despite research demonstrating that dual systems exclude socially marginalised students (Borgna, 2016; Deissinger, 2015; Eckelt and Schmidt, 2014), are slow to reform and are of declining labour market relevance (Gessler, 2017), contribute to gender segregation and inequality (Dingeldey, 2016; Haasler and Gottschall, 2015; Lamamra, 2017; Mayer, 2001), and drive social stratification (Protsch and Solga, 2016). What is more, there is a risk that in transferring the policy and its institutional apparatus, these issues will be reproduced in new contexts (Langthaler, 2015; Mayer, 2001). Mayer (2001: 204) develops this critique to argue that dual apprenticeships have been deployed as part of a Western development project grounded in modernization theory in which 'the traditional economy and the indigenous forms of training were counted as hindrances to the modernization processes'. In reality, German cooperation efforts are more fragmented and diverse than this narrative might suggest (Fontdevila et al., 2022), but the normative supremacy of DACH systems retains significant power and indeed relies on a Global North to South hierarchy of knowledge and practice (Schmees and Smith, 2024).

As such, much of the research examining dVET systems in low- and middle-income country (LMIC) contexts focuses on (implicit or explicit) donor-to-recipient comparison to assess implementation success (Vanderhoven et al., forthcoming). While I would not advocate ignoring the cross-national attraction processes at play in the growing prevalence of dVET systems around the globe – indeed there is need for more critical engagement with this phenomenon (Fontdevila et al., 2022; Vanderhoven, 2023; see chapter two) – there is also value in treating these recontextualised policies as objects of study in their own right, which warrant the same level of critical theorisation and empirical scrutiny as TVET systems in the Global North (McGrath, 2012). Particularly focusing on LMICs, the following paragraphs explore in greater depth three facets of the literature on dVET in 'recipient' contexts that merit greater focus: namely, critical theorisation, empirical basis, and youth perspectives.

In 'donor' dual system contexts, there has been a growing current of critical sociological research that advances theoretical understanding of dVET (Imdorf et al., 2010). Drawing on feminist theory, research has explored gender segregation within vocational training and the labour market as well as gender inequities in dVET employment outcomes through the concept of *Beruf* and the philosophy of work (Mayer, 2001), gender socialisation theory (Lamamra, 2017), and adopting a political economy lens (Haasler and Gottschall, 2015). Similarly, scholars have interrogated dVET's role in driving inter-generational social stratification through the sorting of particular social classes into different segments of the education system, including vertical stratification within dVET itself

(Protsch and Solga, 2016; Shavit and Müller, 2000). The intersections of class, ethnicity, migration background, and gender have been explored in relation to dVET access, suggesting that capitals of different kinds shape which young people are able to transition successfully into dual programmes (Beicht and Walden, 2017; Hupka et al., 2006; Hupka-Brunner et al., 2010). Indeed, there is significant evidence suggesting that dVET acts to reinforce rising inequalities of different kinds (Sackmann and Ketzmerick, 2020 cited in Imdorf et al., 2010: 9).

Looking to research on dVET models in LMICs, the majority of research focuses on descriptive analysis of transfer efforts (e.g. Barabasch et al., 2009; Pilz and Wiemann, 2021; Remington, 2017). There are, nonetheless, emerging (but fragmented) examples of theoretical development. Maitra and Maitra's (2021) research with trainees in India highlights dVET's function in inculcating gendered and classed norms about docility, entrepreneurialism, and personal responsibility by encouraging aspirations of social mobility. Without delivering meaningful changes in material circumstances or lifestyles, this leaves female dVET graduates no better off, but absolves state institutions of responsibility for their continuing socio-economic vulnerability. In Benin, social change theory has been used to highlight the mutually-reinforcing positive effects of dual training on self-esteem and labour market competitiveness among graduates (Bankolé et al., 2023). At the policy adoption level, interviews with national and international actors have shed light on the political processes at play in the adoption of dual policies in LMICs, revealing how prevailing ideologies, strategic proximity/distance from German cooperation actors, and historical collaboration structures and industrial relations influence the reasons why, and ways in which, dVET policies are developed and implemented (Cervantes et al., 2021; Fontdevila et al., 2022; Maitra et al., 2022; Valiente et al., 2021). Similarly, discursive analysis of transfer activities in Costa Rica has used a sociological institutionalist lens to highlight the commodification and mythification of German dVET policy, hampering the contextual relevance and effectiveness of local programmes by maintaining a dependence on foreign experience (Schmees and Smith, 2024). While these examples represent important first steps, they appear as outliers in a field that would benefit from substantial theoretical reinforcement (McGrath, 2012).

Perhaps directly contributing to this theoretical underdevelopment, empirical research about dual apprenticeships in non-donor contexts has been found to be limited in quantity, quantity, and diversity of research focus (Pilz and Wiemann, 2021; Vanderhoven et al., forthcoming). In a 2021 synthesis of dual transfer literature (Vanderhoven et al., forthcoming), colleagues and I analysed 45 academic publications on the topic. Of these, only 11 were empirical studies, five of which were

assessed as being of low quality.[11] Of the 11 empirical studies found, five used data from LMIC contexts. While this was not an exhaustive review (Vanderhoven et al., 2021), it does point to a substantial empirical deficit in the dVET knowledge base (see Tripney and Hombrados, 2013 for discussion of similar shortcomings across wider TVET research). Given that, in these settings, dVET models are contending with very different contextual conditions from those on which theories about dual's functioning are predicated (Chankseliani et al., 2017; Valiente et al., 2020b), empirical reinforcement through the application of innovative and robust methodologies would make a substantial contribution to our understanding of the functioning and effects of dVET in LMIC contexts.

Within the base of empirical research that does exist in such contexts, dVET participants and young people make only a minor contribution as research informants and participants. In 'donor' contexts, research with young people forms an important pillar of a diverse knowledge base gathered from a range of stakeholder perspectives. In LMICs, a substantial proportion of research focuses on the institutional level, examining the perspectives and actions of policymakers, cooperation actors, and employers (e.g. Láscarez-Smith and Schmees, 2021; Nouatin, 2021; Pilz and Wiemann, 2021; Vogelsang et al., 2022; Wiemann and Fuchs, 2018). While this is undoubtedly an important component of our growing dVET knowledge, when not triangulated with the perspectives of policy participants, it can produce imbalances of perspective (Best, 2007; Vanderhoven et al., 2024). For example, a nascent current of postgraduate dVET research with young people points to issues generated by policy structures and firm behaviour. In a South African dVET pilot, apprentices described how their pedagogical and professional development was hindered by employers reshaping programmes to their immediate production needs, rather than offering broad occupational development (Von Maltitz, 2018). In Benin, apprentices have highlighted the necessity of monitoring and evaluation mechanisms to protect training quality and post-graduation transition support to enable the desired employment outcomes (Odjo, 2021). Across Mexico and India,[12] dual trainees have reported instances of exploitation, mistreatment, and discrimination in their host firms, which act to reinforce existing social disparities among diverse student bodies (Maitra and Maitra, 2021; Valiente et al., 2020b; Vanderhoven et al., 2022). Thus, an over-reliance on particular stakeholder perspectives misses these important insights. The inclusion of youth perspectives

[11] Publications were assessed on the clarity and robustness of the adopted methodology, looking for an organised, rigorous, and consistent approach to gathering and analysing data, outlined in a clearly-indicated methods section. Empirical studies deemed to be of low quality often gave little or no explanation of methodological approach or employed methods that were notably limited in their scope and/or relevance.
[12] Research conducted as part of the *Dual Apprenticeship* project, which is connected to this doctoral project and uses some of the same data analysed in this thesis (see chapter five for further discussion and www.dualapprenticeship.org for more information).

therefore appears a fruitful avenue for reinforcing the diversity and reliability of knowledge about dVET in LMIC contexts (Hernández-Fernández et al., 2022).

This thesis thus responds to those three important gaps in the dVET transfer literature, seeking to: i) advance theory about how dVET functions in LMICs; ii) do so based on empirical research; and iii) centre the experiences and insights of young policy participants as hitherto under-represented stakeholders. Given the highlighted paucity of research that covers these three areas of interest, the remainder of this literature review will discuss research that has approached the broader field of TVET in such a fashion, particularly focusing on the long-standing tradition of youth transitions research within vocational education.

3.3. TVET and youth transitions

Initial vocational education and training (IVET) programmes, such as dVET, intervene in and attempt to influence the transition process that young people go through as they move from adolescence to adulthood and, according to the normative ideal, from education to work. As such, the question of 'youth transitions' is profoundly relevant to the field of TVET, even as the concept of 'youth' remains complex and contestable. For policy purposes, we often attach a bracket that demarcates the beginning and end of youth (although these have been subject to significant expansion over time), but in reality 'the boundaries of childhood, youth and adulthood are blurred, indistinct, porous and changing' (Furlong et al., 2011: 361). 'Young' and 'old'/'adult' can be understood as social constructions, even while they have a relationship to the natural properties of age (Bessant et al., 2020; Bourdieu, 1993). Social constructions that, like any other, are often treated as if homogenous, while containing great heterogeneity (Castillo Fernández et al., 2019). Each side of the dichotomy can only be understood in contrast and contestation with the other, Bourdieu (1993: 94) noting that 'the logical division between young and old is also a question of power, of the division (in the sense of sharing-out) of powers'. The length and meaning of adolescence has changed over time and is conditioned by the competing expectations placed upon young people in different contexts (Bourdieu, 1993; Brannen and Nilsen, 2002). Indeed, as social understandings of youth shift, we produce new categories – such as 'young adulthood' or 'emerging adulthood' (Arnett, 2014; Furlong et al., 2011) – to account for these changing features and new phases of socialisation. Very often, the framing of 'youth' takes place in relation to social institutions (school, work, family) as a period of not-yet-complete socialisation and of intense decision-making and identity-formation (Castillo Fernández et al., 2019).

There are then two important facets to 'youth' and youth transitions as relate to vocational education: i) how 'adult' policymakers and other stakeholders conceive of 'youth' as potential or actual participants in TVET and how it is hoped their youth transitions will unfold; and ii) how vocational learning and progression through vocational programmes shape the construction of individuals' identity in relation to social categories of 'youth' and 'adulthood'. Beginning with the former, Atkins (2017: 648) discusses how neoliberal TVET policies:

> articulate two dissonant models of youth […] as a problem and as a resource. Both objectify youth and define them as a homogenised 'other' failing to acknowledge individual selves and lives. The deficit model perceives youth – and, implicitly, working-class youth – as a problem to be solved … forming a stark contrast to an alternative 'utilitarian' […] conceptualisation of youth as a resource or form of human capital.

TVET, then, offers a means of shaping young people's transitions into a 'useful' and productive vision of adulthood based on economic integration and success. This is presumed to bring aggregated societal good in the form of rising employment, economic growth, social cohesion, and more. Simultaneously, when the implementation of TVET programmes does not produce widespread social and economic good, young people can be framed as having failed to capitalise on their opportunity for a positive transition (Atkins, 2017). The notoriously complex and stubborn nature of such social goals is thus individualised and a new intervention can be conceived that targets 'youth as a problem' through educational means to tackle economic ills (Valiente et al., 2020a). Such a deficit framing can be particularly present when vocational education is framed in relation to international development goals (Aikman et al., 2016)

With regards the latter, the impact of neoliberal globalisation is also felt. In Mexico, Castillo Fernández et al. (2019) have argued that as the notion and possibility of a lifelong social identity linked to stable, decent work disintegrates, young people must instead contend with an itinerant, ephemeral, and volatile trajectory of identity formation based on a transformed, precarious work culture (see also Miranda and Alfredo, 2022). The TVET system therefore interacts with this work culture, both as a potential means of escape into the higher-reward opportunities that do still exist and as a reproducer of labour relations. Education, including TVET, offers a means through which to envision and construct a future for oneself, with young people possessing the widest and least cemented conception of the 'future' (Bourdieu, 1993; Castillo Fernández et al., 2019). Vocational education can thus foster a vision of 'adulthood'/the future characterised by possibility and power (Freire, 1996; Tur Porres et al., 2014), or integration into social and economic positions of necessity, conformity, and survival (Castillo Fernández et al., 2019; Tur Porres et al., 2014). Furthermore, given the socially constructed nature of 'youth', temporal and other conceptions of youth experience generated in Global North TVET contexts might not be relevant in different parts of the Global South,

where concepts and realities of family, citizenship, work, and, thus, 'youth' diverge (Cooper et al., 2019; Miranda and Alfredo, 2022; Vandegrift, 2015).

Considering then in greater detail how youth transitions have been explored in TVET research, this review continues to consider three questions that research has sought to address: i) how and why do young people come to participate in TVET?; ii) how and why do their experiences of training differ?; and iii) what are the different transition outcomes produced by TVET and how might they be explained?

3.3.1. Transitions into TVET

Transitions into TVET are fundamentally conditioned by the degree of social status and esteem afforded this educational pathway. While notable variations in perceptions of TVET should not be overlooked, vocational education is most often viewed as a less attractive and prestigious option than liberal education (Allais, 2020; Winch, 2013). When schools, governments, and families express (implicitly or explicitly) a preference for academic education, young people are encouraged to view a vocational route as the secondary option (Kersh and Juul, 2015; Winch, 2013). Indeed, many young people arrive in TVET following fragmented personal and educational histories or having found other educational pathways closed to them (Pantea, 2020; Woronov, 2020).

This unsurprisingly results in important interrelationships between social class and TVET participation. In the first instance, young people may find that the social and spatial environment they inhabit offers a class-conditioned array of educational options, with rural-urban and intra-city inequalities resulting in TVET being the most (or only) physically and financially accessible educational route for poor young people (Garnica-Monroy and Alvanides, 2019; Pantea, 2020). Furthermore, given the historic association between vocational training and lower paid and lower esteem employment (Winch, 2013), young people from lower class families are more likely to have access to knowledge about TVET pathways (and, conversely, less likely to be able to draw on knowledge about academic pathways) in their immediate social networks. Thus, in what has been described as a process of pragmatically-rational decision-making (Hodkinson and Sparkes, 1997; see also Breen and Goldthorpe, 1997), young people draw on the capitals and class habitus of their families in deliberating TVET entry. Layered on top of young people's personal networks is the influence of the educational professionals, who are more likely to direct working class students towards vocational education than their middle-class peers (Reay, 2017; Shavit and Müller, 2000). In addition to classed differences in the *information* that young people may access as they consider a transition into TVET, their *motivations* for participation may also be informed by classed

sensibilities. For example, the occupational orientation of vocational training may be more appealing to young people in constrained economic circumstances, as they seek to speed up labour market entry and begin contributing to their households or establish their financial independence (Altreiter, 2021; Pantea, 2020). Conversely, the poorest young people may find themselves financially unable to forego full-time work in order to enter vocational training (Alla-Mensah et al., 2021).

Given the TVET sector's historic association with blue-collar and manual trades and the disparity of esteem that feeds class-stratified interest in vocational routes in most contexts, the TVET transitions of middle-class students have barely been explored (Atkins, 2017). Studying the behaviours and logics of middle-class actors can be very revealing of the means by which inequality is maintained (Ball, 2003; James and Beedell, 2009) and thus this is an important omission. For example, while policy narratives often suggest that more choice and information resources for making transition decisions will result in increasing equity, study of middle-class behaviours suggests the opposite is true, as surrounding class inequalities remain undisrupted (James and Beedell, 2009). Greater investigation of how middle-class young people come to select or rule out vocational training routes would thus be beneficial for the field, as well as how intra-class privileges are reinforced through changing vocational pathways (Esmond and Atkins, 2022).

Transitions into TVET are also notably shaped by gender and the prevailing gender segregation of labour markets – the two co-existing in a mutually reinforcing fashion (Curran and Tarabini, 2022; Fuller et al., 2005; Fuller and Unwin, 2013). Normative gendered expectations about appropriate and feasible careers inform young people's choices about TVET entry and occupational specialism, in turn shaping the future distribution of the labour market. Skills are thus framed 'as embodied cultural capital, the value of which varies with the bearer' (Taylor et al., 2015: 95), diminishing the full spectrum of competencies deployed in 'men's' and 'women's' work. Scholars have highlighted the social and institutional influences and constraints on the formation of gendered career aspirations and connected educational pathways (Curran and Tarabini, 2022; Fuller et al., 2005; Fuller and Unwin, 2013). This includes the role of the built environment in blocking TVET access for women and disabled people (Alla-Mensah et al., 2021). Attention to these barriers contests notions of women's occupational choice as responsible for their inequitable economic position (Niemeyer and Colley, 2015) and points to an institutional responsibility within TVET to challenge social norms, support non-conformist decision-making, and provide inclusive learning environments (Alla-Mensah et al., 2021; Fuller et al., 2005; Kelly et al., 2015; Lappalainen et al., 2013). Furthermore, the continued importance of the gendered division between paid and un-paid work and responsibility for the domestic realm (Breen and Cooke, 2005), despite significant transformations

of work and family life, also continues to produce barriers to women's equitable participation in TVET (Niemeyer and Colley, 2015). Nonetheless, research suggests that family support for non-conformist routes can play a decisive role in disrupting gendered barriers to equitable TVET participation (Frank and Frenette, 2019; Galeshi, 2013).

A further, though less well developed current of research examines the role of migration and racialisation in shaping young people's pathways to TVET (Avis et al., 2023). Blunt discriminatory practices may block racialised young people's entry into vocational courses, particularly in cases where employers exercise recruitment power, such as apprenticeships (Imdorf, 2017; Rusert and Stein, 2023). Conversely, patterns of high aspiration among youth from migrant backgrounds have been found to lead such young people into the most demanding and high-esteem vocational tracks 'against the odds' (Kamm et al., 2023). Recent arrivals however face access barriers produced by language requirements and strict entry timetables (Alla-Mensah et al., 2021). Indigenous communities simultaneously find TVET programmes to be some of the most geographically and pedagogically accessible forms of education offered by formal systems, and face substantial entry barriers related to discrimination and cultural insecurity (Joncas et al., 2023). Thus, the influence of migration and racialisation on young people's entry into TVET is nuanced and context dependent.

Research demonstrates, then, that a wide range of personal, institutional, social, and geographic factors can mediate how and why young people come to participate in TVET programmes. Given the overlapping and intersecting nature of many of these, analysis of TVET access requires a contextualised approach. Nonetheless, given the low social esteem afforded to TVET in most contexts, there is a notable propensity for vocational pathways to be more prevalent among youth populations that are vulnerable and/or under-resourced.

3.3.2. Transitions through TVET

In wider education debates and in policy narratives, TVET can often find itself excused from deeper critical analysis – presumed by its occupational orientation to be a relatively straightforward task of employment preparation and economic technocracy (McGrath, 2012; Vanderhoven, 2023). However, as Bates (1991: 239-40) lays plain:

> Vocational training is not suspended in a socio-political vacuum but can be seen as one arena in which the State attempts to intervene in processes of labour supply on behalf of capitalism. Situated at the interface of individual identity and occupational structures it is swarming with social processes.

As such, examination of young people's experiences of transitioning through and within TVET programmes warrant careful attention to the surrounding socio-political context.

For instance, as 'the antechamber of the labour market', (particularly work-based) TVET typically involves greater contact with the environments and norms of the working world than general academic education (Lamamra, 2017: 381). As such, the normative educational ideal of inclusion can be replaced or attenuated by the prevailing socio-economic relations and divisions of 'adult' society (Kelly et al., 2015). This notably includes sexual and gender hierarchies (mediated by class, disability, and race among other things), the material substance of which is profoundly shaped by the organisation of work and the labour market (Acker, 2009). As Lamamra (2017: 381) observes, during their training, vocational students 'learn what it means to be a professional where the work is mainly undertaken by those of one sex rather than the other. By extension, they learn what it means to be a woman or a man'. This is compounded by the treatment that TVET participants receive from educators and workplace supervisors, which can reinforce gendered stereotypes about the nature of work (Kelly et al., 2015; Lamamra, 2017), reflect ableist exclusionary norms (Shi and Bangpan, 2022), and be mediated by language barriers (Alla-Mensah et al., 2021). For young women, this can implicate them in additional emotional labour demanded by gendered ideals of care and caring produced by patriarchal capitalism (Colley, 2006; Hochschild, 1983). These gendered expectations of disposition and behaviour are carried with women even as they engage in masculinised specialisms (Ledman et al., 2021). Early marriage, a lack of reproductive rights, and gender-based violence may also undermine educational progression for women, exacerbated by a policy environment that does not support educational reinsertion after pregnancy or address the causes of violence (Alla-Mensah et al., 2021).

Growing narratives of a 'boy problem' in education (Martino et al., 2009), whereby young men are viewed as increasingly vulnerable and under-performing, have also been explored and contested in TVET contexts. Rejecting the simplicity of the 'boy problem' narrative, Jørgensen (2015) locates the issues in the structures of Danish dual training and points to the relevance of social disadvantage, especially ethnicity, over masculinity alone. This highlights the need for nuanced and intersectional understandings of gendered TVET experiences (Niemeyer and Colley, 2015) and cautions against the use of social identities as a means of devolving responsibility from structures to individual pathologies (Reay, 2022). Considering masculine identity formation, young men's resistance to intellectual and theoretical work within vocational training has been highlighted (Grønborg, 2013), generating issues for male students as TVET programmes increase their theoretical focus (Korp, 2011). In a context of de-industrialisation, Christodoulou (2016) explores how the decline of traditional day-wage working class jobs and their replacement with insecure and low-reward

employment spurs male TVET students to seek symbolic capital and a sense of masculine dignity through non-work aspects of their habitus such as sports and social connection (see also Connell, 2020). While gender segregation in TVET is more often explored through its relative disadvantage for women, there are also important reflections on how this is reinforced for men through homophobic conditioning and socially-policed conceptions of heteronormative masculinity (Lappalainen et al., 2013). Indeed, more nuanced exploration of the relationships between gender, sexuality, learning, and work in vocational contexts would be of value to the field (Niemeyer and Colley, 2015; e.g. see Gates, 2011).

Christodoulou is not alone in drawing on Bourdieu's (1985a) notion of habitus to explain young people's experiences in TVET. Lehmann and Taylor (2015) explore how congruence between the field of apprenticeship and apprentices' habitus can influence reliance on placement support, exposure to exploitative work practices, and programme continuity. This builds on the work of Colley et al. (2003) in theorising a 'vocational habitus' to which TVET students differentially orient their identities during the learning process, influenced by their existing class and gender habitus. Atkins (2017) further explores how class habitus offers up differential access to symbolic capitals associated with education such that opportunities for agency within vocational trajectories are diminished among those in the lowest social positions. This is compounded when distinct forms of capital that reside in working-class cultural life are not recognised as 'real' culture and do not hold transferable value in many of the spaces that provide rewarded progression in capitalist society (Williams, 2011 [1958]), including formal education. However, there is, in an overly structuralist conception of class reproduction, a danger of contributing to the very deficit model of working-class youth that critical TVET theory attempts to undermine (Avis and Atkins, 2017; Livingstone and Sawchuk, 2000) by failing to account for 'creative, discursive agency in conditions prestructured, to be sure, but also fissured in unpredictable and dynamic ways' (Collins, 1993: 134).

Indeed, Powell and McGrath (2019) have drawn on the work of Margaret Archer (1995) to challenge an over-emphasis on institutions and structure in TVET research, insisting on the need for a stronger account of agency on the part of vocational education actors (students, educators etc.) in explanatory frameworks. The critical capabilities account of vocational education and training (CCA-VET) (McGrath et al., 2020a; 2020b) reinforces the capabilities approach with critical realist perspectives, and foregrounds the life projects and aspirations of vocational students as a central entry point to understanding how TVET functions. In doing so, the role of young people's reflexivity can be more closely scrutinised, shedding light on the 'internal conversations that mediate the effects of circumstances on actions, and define the courses of action taken in given situations' (DeJaeghere et al., 2016: 9; discussing Archer, 2012). This greater attention to the individual and

human processes at play in young people's TVET participation provides particularly useful insight into how learning functions within TVET programmes (Ngcwangu, 2019). For example, young people's families and communities have been found to play a decisive role in well-being and learning (Shi and Bangpan, 2022). Nonetheless, the differential role of TVET policy design in fostering or inhibiting the agency of participants should not be underestimated by a tendency towards methodological individualism (DeJaeghere, 2020b; Lehmann, 2005; 2012). Indeed, TVET systems that do not connect to mechanisms of youth voice and collective action can undermine their own pedagogical aims by overlooking threats to training quality and equity (Langthaler and Top, 2023; Moodie et al., 2019). Equally, given the relative marginalisation and vulnerability of TVET participants, additional pedagogical efforts and financial support may be required to foster engagement and motivation and protect continuity (Alla-Mensah et al., 2021; Shi and Bangpan, 2022).

3.3.3. Transitions from TVET

Young people's agency is of further interest when considering the differing outcomes that participation in TVET produces, particularly as relates to personal and professional aspirations. The low status of vocational education could be – and often is by policymakers – presumed to equate to relatively low aspirations among participants in terms of further educational progression and socio-economic status. However, TVET students often aspire to outcomes much higher than those that policy frameworks view them as destined for (Aldinucci et al., 2021; Shi and Bangpan, 2022). Aldinucci et al. (2021) draw on critical realism and CCA-VET to emphasize the relevance of stark social inequalities, precarious working conditions, and dominant neoliberal paradigms in Chile for explaining TVET students' high educational aspirations. In Palestine, despite some of the most profoundly constraining surrounding conditions, vocational programmes have been found not only to produce traditionally-valued outcomes of employment and higher incomes, but also to be utilised by young people in responding to their contextualised aspirations for greater empowerment and control over resources (Hilal and McGrath, 2016). Similarly, TVET graduates in Kenya were found to draw on the agentic resources developed through their training to help them navigate challenging employment landscapes, reorienting their pathways to still pursue their desired goals (Nikoi, 2016). Thus, young people's evolving aspirations can have a decisive influence their post-graduation pathways, with TVET programmes sometimes playing an active role in raising young people's aspirations for transition (Maitra and Maitra, 2021). However, these aspirations cannot always satisfied within the socio-economic landscape that young people ultimately confront (Maitra and Maitra, 2021). Indeed, the capacity of vocational education to fulfil the aspirations it generates has

been sharply questioned (Atkins, 2010; Lara Carmona, 2006), particularly given widespread labour market bias against vocational qualifications (Shi and Bangpan, 2022).

As an example, a longitudinal study of rural Tanzanian TVET explored girls' ongoing aspiration construction in relation to social and material constraints (DeJaeghere, 2018). While vocational training did help young women to transgress gender norms and train in male-dominated sectors, pervasive discrimination blocked labour market entry for most. Indeed, many young women diverted to self-employment to avoid being solicited for sex in exchange for work in their specialism. For working-class women across Europe, Torre (2019) found that gendered and classed structural constraints intersected to consistently frustrate their attempts to boundary cross into high-skill blue-collar work, with TVET participation offering little ameliorative impact. Thus, even where women fulfilled their plans of working in traditionally male-dominated sectors, they occupied the lowest status positions within those work environments. Indeed, vocational education such as apprenticeships appears to do little to disrupt vertical gender segregation (Frank and Frenette, 2019; Fuller and Unwin, 2013). This incorporates the persistent influence of domestic and reproductive roles on women's post-TVET career development (Niemeyer and Colley, 2015).

Such employment barriers are not only related to gender. In the English context, Avis and Atkins (2017) point to the tensions between the increasing ubiquity of low-wage, low-skill employment and narratives promoting individual skill development through TVET. As a result, social and material forms of class difference are reformulated but undisrupted; working class youth being pathologized by an individualising discourse and facing ever greater precarity. The results of these uncertain and fractured transition experiences are carried through the life course, reinforcing class difference through poorer career and salary advancement (ILO, 2022). In LMIC contexts, the size of the informal economy may profoundly limit young people's ability to achieve the formal employment outcomes promised by TVET (Alla-Mensah et al., 2021). Where young people do enter informal employment, this is likely to be low quality and low reward (Alla-Mensah et al., 2021). Such labour market constraints further speak to important temporal variations in vocational transition possibilities. Intermittent periods of crisis, whether political, economic, health-related or environmental, can be hugely consequential for the transition trajectories of different vocational cohorts (Alla-Mensah et al., 2021; Pathak, 2017; Pilz, 2017; Yarrow, 2009) – also producing intra-cohort variation among groups with differential access to power and resources in times of scarcity (Hilal, 2019; Maitra and Maitra, 2021; Yarrow, 2009). Thus, interventions in the skills system cannot limit themselves to supply side dynamics, and reform of demand and prevailing work culture and practices may also be fundamental to determining TVET transition outcomes (Alla-Mensah et al., 2021; Shi and Bangpan, 2022).

Looking beyond employment outcomes, research suggests that TVET can be effective in building socio-emotional competencies valued by young people (Shi and Bangpan, 2022). Indeed, young people may extract personal developmental outcomes from their vocational training that are not formally recognised by policy structures (Hilal and McGrath, 2016). Advocating for movement beyond human capital-based conceptions of TVET, Moodie at al. (2019: 7) emphasise the role of vocational education in developing 'students' capacity to understand and manage themselves, to understand and manage their environment, and to appreciate and contribute to human culture'. It has been suggested that greater attention to these outcomes when designing and evaluating TVET programmes could foster social justice and emancipation benefits (Moodie et al., 2019; Tur Porres et al., 2014). Further challenging formal notions of transition as the primary measure of TVET success, Colley (2009) argues for the use of feminist theory to develop a sociology of time that disrupts the masculinised conception of 'transition' as a linear chronology, and which does not help to explain women's lived experience of learning and work (or, indeed, those of many men). Instead, a more lifelong perspective may reveal the gradual, cyclical, and unexpected effects of TVET participation.

3.4. Concluding comments

This review has highlighted that significant gaps exist within research on dVET in non-donor contexts, particularly in LMICs. Critical theorisation, empirical foundations, and youth voice could all benefit from being strengthened. Fruitful means of developing these three aspects can be found in research exploring youth transitions in relation to TVET. As such, this thesis will attempt to address these shortcomings by offering a critical account of dVET youth transitions in Mexico based on empirical research with dual students. Doing so will contribute to challenging the youth-exclusionary bias that exists within current knowledge about dVET in these contexts and will support empirical interrogation of the claims made about (dual) apprenticeships in global and national discourses. It will also enrich and extend the existing literature which seeks to explain and understand young people's TVET transitions.

Having reviewed the important body of research demonstrating the many ways in which the surrounding social context can mediate young people's vocational youth transitions, it is also important to highlight that, still, comparatively little of this research has been conducted in LMICs or employing theoretical perspectives made relevant to Global South contexts (Tripney and Hombrados, 2013). This is not an issue confined to TVET research (Connell, 2015; Roberts and Connell, 2016), but it is perhaps compounded by the field's relatively recent, if not nascent, efforts to tackle weak theoretical development and eurocentrism (Powell and McGrath, 2019). Therefore,

the dynamics and explanations explored here cannot be presumed to hold relevance across divergent social, economic, cultural, political, and environment contexts, including between the great diversity of contexts that make up ‘the South’.

Looking to Mexico, the role of familialism and collectivism in producing ‘self-modification (changing oneself to adapt to needs and wishes of others) and affiliative obedience (obeying parents and those in power in exchange for protection, love, and attention)’ (Diaz-Loving and del Castillo, 2010: 53; see also Hietanen and Pick, 2015) is likely pertinent to transitions among Mexican youth. The specific dynamic of Mexico’s large informal economy (of which young people form a large part; Castillo Fernández et al., 2019) in mediating class identities (Giglia, 2014; Rojas-García and Toledo González, 2018) and producing a subproletariat (Wilson, 2018) should not be neglected when considering the role of TVET as a route to formalised skills and employment. The enduring relevance of coloniality – ‘the symbolic, invisible and indelible traces of the colonial experience’ (Giraldo, 2016: 161) – in Latin America generates a racial politics of Mexican identity that interacts with historically constituted gender relations and racialised constructions of class to produce a distinct set of intersecting social relations (Espinosa Damián, 2009; Giraldo, 2016). In Mexico, there has been a historic unwillingness to acknowledge the role of race, ethnicity, and indigeneity in social stratification, these identities subsumed under the national racial ideology of *mestizaje* (Tuckman, 2012; Villarreal, 2010). However, class, skin colour, and indigeneity appear as important and intermingling factors in socio-economic status, particularly as relates to education (Flores and Telles, 2012; Stromquist, 2004). Furthermore, histories of colonial oppression connect to an enduring interrelationship between masculinities and extreme levels of sexual and gender-based violence in Mexican society (Hietanen and Pick, 2015; Patil, 2017; Viveros-Vigoya, 2016) and modern capitalist globalisation has produced ambivalent effects for women in the country – who through rising labour market participation gain access to greater autonomy away from traditional domestic gender relations and informal work, but also stand to lose some distinct powers of their domestic role in exchange for marginalised, exploitative, and poorly remunerated roles in the formalised workforce (García and de Oliveria, 2007). Thus, while the explanations of young people’s transitions into, through, and beyond TVET discussed in this review provide a powerful starting point, their explanatory power requires careful consideration when applied in contexts which have been less theorised and researched through the lens of vocational education (McGrath, 2012; Tripney and Hombrados, 2013).

4. Analytical framework: The Grammars of Youth

4.1. Introduction

In the previous chapter, I reviewed academic literature relating to the transfer of dual vocational education and training (dVET), highlighting the current paucity of research on dVET youth transitions in low- and middle- income country (LMIC) contexts. I therefore further explored how youth studies and youth transitions perspectives have been applied within technical and vocational education and training (TVET) research, focusing on empirical application. In this chapter, I look in greater depth at the theoretical traditions and concepts that underpin the sociology of youth transitions, including which questions each strand is best equipped to address. This summary is predominantly high-level and does not reach into the detail of each perspective and its counterclaims, but provides a useful basis for orienting my chosen conceptual framework – The Grammars of Youth – in relation to prevailing theoretical perspectives and my research aims.

Sociology seeks to theorise the explanatory forces that shape social life. In doing so, competing explanations emerge as to which forces should be considered most important and how they function. At the core of these sociological debates is often the question of structure and agency – which exerts the greatest influence on the formation of our lives and societies, how does that influence function, and how do the two interrelate? In the sociology of youth transitions, there are some theoretical perspectives that position structures as fundamental to the opportunities, aspirations, and decision-making of young people. In the second section of this chapter, I first explore a number of conceptual frameworks that fall into this camp; including the political economy of youth, rational action theory, transition regimes, and habitus. There are also theoretical perspectives which posit that individual agency and action are far more important for understanding how youth transitions unfold. In this case, I discuss modernity theory, post-structuralist perspectives, and the capabilities approach. More often, a 'middle ground' is found in which theorists acknowledge that both structures and agency play their part in young people's lives, and therefore the most useful conceptual frameworks will need to account for the influence of each and for their interaction. I discuss several theoretical approaches which attempt to 'bridge the divide' and integrate the significance of material conditions, power relations, *and* the heterogeneity and transgressive potential of young people's reflexivity and subjectivities into their explanations. These include the social generation approach, critical realism, careership, bounded agency, and intersectionality. In the third section of this chapter, I map out my chosen conceptual framework – the Grammars of Youth (Bendit and Miranda, 2017; Miranda and Alfredo, 2022) – and position it in

relation to the broader field of youth transitions and my research aims. I close by making initial connections to methodological choices.

4.2. Conceptual approaches to the sociology of youth transitions

4.2.1. Looking to structures

There are a number of theoretical frameworks that foreground the role of social structures in the development of youth transitions. The political economy of youth (Côté, 2014; 2016; France and Threadgold, 2016; Sukarieh and Tannock, 2016), directs its focus towards the structural forces and material conditions that shape young people's lives, placing the conceptualisation and material experiences of 'youth' in historical and institutional context to understand and explain how social, economic, political, and cultural forces influence the transitional trajectories that are offered to and realised by young people (Sukarieh and Tannock, 2016). Developing a neo-Marxist strand of this approach, Côté (2014) argues for conceiving of youth-as-class in their relations to adults on the basis of their relative exploitation and marginalisation, which is justified using bio-ideological conceptions of inferiority and drives increasing 'consciousness', and acceptance, of inter-class difference. On this basis, he argues that the youth cohort has been systematically proletarianized by neoliberal capitalist economies, delaying transitions to living wage work and financial independence (rather than such delays stemming from lifestyle choice). Furthermore, such a perspective contests the legitimisation and maintenance of unequal material conditions and looks for solutions based on radical renewal over adaptation of existing systems. In this way, a Marxist political economy framework offers explanations of how capitalism and wage-labour relationships act to structurally disadvantage young people in their transitions and how such disadvantages might be rectified (Côté, 2014; 2016; Yates, 2021). However, this treatment of youth-as-class offers little insight into substantial intra-class difference and inequality (Merino and Miranda, 2022).

In response to Côté (2014), France and Threadgold (2016) draw on Bourdieusian concepts to argue for a political *ecology* of youth transitions, which takes account of social structures beyond the economic and offers theoretical means of understanding young people's decision-making and the role of environmental factors in producing unequal outcomes *among* young people. Using such a framework can help to trace the environment of possibilities, options, and obstacles that surround young people, and which temper and facilitate their decision-making to produce outcomes that, while not predetermined, can tend to reinforce class interests. Using Bourdieu's notions of illusio and social gravity, France and Threadgold argue that youth transitions are characterised by a momentum and path dependency that cumulatively coalesce 'evaluations, decisions and actions

that are realistic responses to one's place in the world' (2016: 625) into an orientation to consistency and continued investment in a given pathway. Within fields – 'leaky containers of social action with their own rules and norms' (ibid: 624) – possession and access to differential capitals afford young people more or less advantageous social positions from which to make and re/un-make their choices (Bourdieu, 1985b). Such a framework, then, is best placed to examine youth as a dominated group within political economy structures, while recognising the endurance of social difference between youth (France and Threadgold, 2016). While this approach does emphasize the continued possibility of unpredictable responses to risks and opportunities, it is weaker in its capacity to explain why and how young people might express aspirations and make choices that are transgressive or 'unrealistic' given their surrounding social context as they engage in self-construction (Thomson and Holland, 2015).

In a similar vein, Ken Roberts' (2009) rational action theory suggests that as young people make education and employment decisions, they do so on the basis of rational assessments of the resources and opportunities at their disposal. As such, their position in relation to broader social structures becomes an important determinant of transition trajectories, enacted through 'choices' but reproductive of the unequal social order (Roberts, 2003; Snee and Devine, 2015). From this perspective, it is most useful to trace the 'opportunity structures' (both social and spatial; Merino and Miranda, 2022) that surround young people as they transition into adulthood in order to understand which choices emerge as most rational for young people in a given context (Roberts, 2009). Furthermore, feminist theory has been used to foreground the fundamentally gendered nature of globalised structures that surround young people, suggesting that a discursive emphasis on individual responsibility and biography construction is used to mask the underlying importance of structural determinants of opportunities and expectations and maintain systemic inequalities of class and gender (Harris, 2004; McDowell, 2009). Considering how different social structures intersect and intercede in young people's lives therefore holds crucial explanatory power for understanding the biographies they are able to 'construct'. Again, both approaches offer strong explanations of how structure and agency can combine to reproduce the existing social order, but tend to treat diversions from this status quo as an aberration, rather than investigating the patterns that might help to explain transgression and lead to social transformation.

Taking a primarily institutionalist perspective, typologies of European transition regimes have been developed to explain how legal codes, education and training systems, labour regulations, welfare regimes, and other institutional structures converge with cultural and social norms to produce contextualised conceptions of 'normal' biographical orientations (Raffe, 2009; Walther, 2006; see also Schoon and Heckhausen, 2019). For example, collectivist social norms may help to produce

welfare regimes and childcare policies which facilitate women's participation in education and work, expanding the range of biographies within easy reach for young women. Alternatively, a lack of formal work opportunities combined with low social welfare protections can extend the length of transition to financial independence and reinforce the protective role of family and informal work (Merino and Miranda, 2022; Walther, 2006). Most readily mobilised in comparative research, a transition regimes framework can be used to explain how structural differences produce different pathways and outcomes for youth in different contexts and offer insights into how policy might be calibrated to alter transition regimes and more successfully support the outcomes desired by policymakers or young people. It is less effective in considering the micro scale of individual transition development (Thomson and Holland, 2015).

Finally, Bourdieu's notion of habitus (paired with field and capital) has been one of the most recurring theoretical tools used by researchers of youth to understand and explain the role of structural forces in youth transitions (Burke, 2015; Colley et al., 2003; Reay, 2004; Skeggs, 2004). The concept takes greater and more comprehensive steps to connect the macro and micro levels of social identity formation than some of the other approaches discussed here. In fact intended to resolve the ontological dualism between structure and agency (Bourdieu, 1985a; Costa and Murphy, 2015) and often used and characterised in a simplistically structuralist fashion (France and Haddon, 2014), the concept of habitus advances Bourdieu's strain of 'structuralist constructivism' (Reay, 2004: 432) by theorising the 'socialised subjectivity that agents embody both individually and collectively, through the interrelationships they establish in the social spaces to which they belong' (Costa and Murphy, 2015: 7; see also Bourdieu, 1985a). For Bourdieu, 'it is through the workings of habitus that practice (agency) is linked with capital and field (structure)' (Reay, 2004: 432). Habitus, thus, is the collection of embodied tendencies, dispositions, social knowledge, and self-perceptions that individuals accrue through their lifetimes as they occupy particular social positions and interact with different fields – youth representing a particularly important period during which habitus develops, and is developed by, multiple moments of decision-making. The differing social, economic, cultural, and symbolic capitals that young people possess afford them materially different possibilities for action and are an important structuring force (Bourdieu, 1985a). Thus, Bourdieu's concepts of habitus, field, and capital provide a useful lens for explaining how, at the individual level, the structures of social life provide the conditions for young people's subjectivity and practice, and influence identity formation in relation to class, gender, race, and more (Coffey and Farrugia, 2014; Skeggs, 2004). By virtue of taking the individual as the starting point for analysis, habitus is perhaps less powerful for examining how political, economic, and policy structures influence youth transitions on a collective level than approaches such as transition regimes and the political economy of youth.

4.2.2. Looking to agency

In contrast to those perspectives that particularly focus on structural influences, there are theoretical approaches that afford greater weight to the role of individual agency and action in realising youth transitions. The 1990s saw the rise of 'modernity theory', which contends that established social formations and relationships have been transformed by late modernity to render social experience increasingly uncertain, risky, and in flux (Beck, 1992; Giddens, 1991; Johansson and Herz, 2019). As a result of these changes, actors have 'become increasingly caught up in multiple (individualising) institutional demands and arrangements' (Wyn and White, 2015: 30), and the social categories and collective identities that more structuralist perspectives rely upon as explanatory forces – particularly class – no longer hold the same relevance (Beck, 1992; Furlong, 2015). Thus, individualisation, reflexivity, and the tracing of 'choice biographies' become more relevant tools for understanding how youth transitions unfold (Johansson and Herz, 2019). While individuals are increasingly detached from established social bonds and are in some ways freer to reflexively construct their life paths, such individualisation theses do not therefore present this as an optimistic development. For Giddens (1991), 'reflexive modernity' compels individuals to develop self-awareness and participate in reflexivity, or face social costs, while Beck (1992) posits a new 'risk society' in which individuals must become literate in risk assessment and avoidance, no longer able to rely on predictable and secure transition pathways. Indeed, a central contention is that 'people's identity has become a task rather than a given' (Wyn, 2017: 93) and individual responsibility for life outcomes has proliferated (Snee and Devine, 2015). While there has been significant criticism of these theories for paying insufficient attention to the enduring relevance of social background for young people's lives (Furlong and Cartmel, 2006; Johansson and Herz, 2019), they nonetheless offer necessary analytical attention to the marked destandardisation of young people's life courses and represent a 'detailed attempt to seriously consider the theoretical influences of agency as well as structure on youth transitions' (Rudd and Evans, 1998: 61). Thus, such frameworks can be useful for examining how young people develop reflexive skills and construct their transitions through education and work without standardised reference points, exploring the changing, fragmented distribution of inequalities and connecting these experiences and outcomes to macro-social change (Merino and Miranda, 2022; Thomson and Holland, 2015).

Post-structuralist thought has also been important for further exploring the role of subjectivities and agency in youth transitions. Questioning the validity of deducing experiences and outcomes from essentialising social categories such as class, race, and gender, such perspectives emphasise the importance of discourse and identity for understanding youth experiences, highlighting the multiplicity and context-dependency of subjectivities (Biggart, 2009). For example, rejecting the

objective existence of masculinity and femininity, post-structuralist feminist frameworks, drawing particularly on the work of Judith Butler (1990; 1993), have been used to explore how gendered social constructs are generated through embodied performance as young people transition through institutional spaces and into the identities of adulthood (Kehily, 2015; Nayak and Kehily, 2013). Similarly, acknowledging that the arbitrary concept of race is sustained through discourse over any biological integrity, post-structuralist perspectives frame individual analysis of how competing and overlapping racial discourses appear, and are reacted to, in young people's lives as the most suitable way of understanding how 'race' impacts youth transitions (Litchmore, 2019; Nayak, 2006). Thus, such frameworks are best positioned to explore the complexity of young people's individual transitions and identity formation and explain how discourses are circulated, generated, and contested in social life. They can, however, privilege discussion of discourse and identity to the point of overlooking the materiality of youth transition experiences.

A final means of theorising agency to be discussed here is the capabilities approach, based on the work of Amartya Sen (1999; 2005) and Marta Nussbaum (2000; 2011). To be clear, this normative theory does not offer the explanatory power of the social action theories discussed throughout this chapter, but it has been a hugely influential theoretical framework within TVET and youth transitions research on the basis of its conceptualisation of agency (DeJaeghere, 2020; McGrath et al., 2020a; Wheelahan and Moodie, 2011) and warrants discussion on this basis. This perspective's primary contribution to structure-agency debates comes from the twin concepts of capabilities – 'what a person is able to do or be' (Sen, 2005: 153) – and functionings – the actual activities and achievements of a person's life (Robeyns, 2005). The capabilities approach normatively prioritises a person's freedom to advance their own well-being, both in terms of the breadth of opportunities available to them and in terms of their agency to choose and pursue a valued life (Sen, 2009; see also McGrath, 2012; Powell, 2012). Structural constraints on that exercise of agency, such a poverty and discrimination, are consequently understood as capability deprivation (McGrath et al., 2020a). Interventions of different kinds can be examined to discover the extent to which they enable capabilities, agency, and well-being (DeJaeghere et al., 2016) or contribute to '"substantive unfreedoms" that hinder people from living a fulfilled life' (Powell, 2012: 645-6), firmly centring young people's voices and life-projects (McGrath et al., 2020a; Walker and Unterhalter, 2007). In addition to its limitation as a normative theory, the capabilities approach has been critiqued for giving a far stronger account of agency than of structure and for tending to methodological individualism (DeJaeghere, 2020). The framework is therefore often combined with more structuralist explanatory theories to address inadequate accounts of structure, power, and inequality (DeJaeghere, 2020; Hilal and McGrath, 2016; Ngcwangu, 2019).

4.2.3. Bridging structure and agency

As mentioned in the introduction, the majority of approaches to theorising youth transitions acknowledge an important role for both structure and agency, and often draw on and combine facets of the frameworks outlined above. This section will explore some of the major concepts of this kind: the social generation approach, critical realism, careership, bounded agency, and intersectionality.

Andy Furlong and colleagues have been particularly active in working to break down two key and interrelated binaries within youth studies: structure-agency and youth transitions vs. youth cultures approaches (Furlong, 2015; Furlong et al., 2011). While acknowledging that late modernity has produced greater uncertainty and ambiguity for youth in transition, the authors nonetheless insist on 'an essential continuity with the past: economic and cultural resources are still central to an understanding of differential life chances and experiences' (Furlong and Cartmel, 2006: 138). This paradox represents 'the epistemological fallacy of late modernity' – young people still face very meaningful structural constraints, but their contours are less clear, and young people have been encouraged to feel individually responsible for the direction of their lives (Furlong and Cartmel, 2006; Snee and Devine, 2015). Therefore, theoretical frameworks that overplay the fragmentation and disillusion of traditional structures – as the authors contend that the individualisation thesis does – not only fail to capture important elements of how the social world functions (Thomson and Holland, 2015), but run the risk of exacerbating inequalities by failing to challenge the enduring influence of social structures (Johansson and Herz, 2019).

A social generation approach is therefore advocated as an alternative (Furlong et al., 2011). Such a framework acknowledges that changes in the structures of education, work, and the meaning and use of time in everyday life produce distinct generational effects, and alter and render more subtle the reproduction of inequalities. Furthermore, contemporary cultural changes around gender, age, sexuality, disability, mental health, race, and more affect both the material conditions available to young people and their identity formation and expression. Within these changes, reflexivity emerges as a key component of how social inequalities are organised, distributed, and reproduced, rather than only a challenge to their existence (Furlong and Cartmel, 2006). Thus, agency is as much a reproductive force as formal structures (Willis, 1977; Coffey and Farrugia, 2014) – in some ways echoing Roberts' rational action theory. However, the social generation approach pays particular attention to spatial and temporal variance and is therefore as interested in social change as in reproduction. Advocates of this approach therefore argue for careful, often longitudinal,

examination of young people's cultural expressions (agency) contextualised within their social conditions (structure) (Furlong et al., 2011). Indeed, according to the authors:

> the major strength of a social generation approach is that it has the capacity to reveal local variations on global patterns: it enables us to understand the significance of subjectivities and the unevenness of capacity across groups (gender, class, race) and across time and place to enact these subjectivities.
>
> (Furlong et al., 2011: 366)

Youth transitions research has also drawn upon Margaret Archer's (1995) critical realist 'analytical dualism' (Aldinucci, 2022; DeJaeghere et al., 2016), which critiqued structuralism for 'downwards conflation' (rendering the agency of individuals a monopolised epiphenomenon of structure) and subjectivism for 'upwards conflation' (treating structure as the passive aggregate of individual action, with no independent influence). Instead, this framework calls for recognition of the emergent, *sui generis* properties of social structure that cannot be reduced to a 'mélange of individuals' (Archer, 1999: 5). The separation of structure and agency to different strata (i.e. dualism), which interact via relationships of constraint/enablement (structure on agency) and reproduction/transformation (agency on structure) over time, is said to provide a methodological way forward for social science analysis (Archer, 1995; Danermark et al., 2019). Archer (2012) identities reflexivity as playing an important role within agency, referring to the 'internal conversations that mediate the effects of circumstances [i.e. structure] on actions, and define the courses of action taken in given situations' (DeJaeghere et al., 2016: 9). Nonetheless, Archer's dualism leaves in play a disconnectedness that has been critiqued (Burke, 2015).

A further important effort to conceptualise the role of structure and agency in youth transitions comes from pragmatically-rational decision-making and careership (Hodkinson et al., 1996; Hodkinson and Sparkes, 1997). This framework posits that while conceptions of vocational students' free will are overemphasised in policy discourses, their decision-making processes are:

> nevertheless rational, because they are based on personal or work experience, or on advice from friends and relatives. They are also pragmatic, based on 'partial information located in the familiar' rather than made on the basis of the full range of available information found in official documents.
>
> (Delay, 2022: 117)

Decision-making is therefore both subjectively rational (subjective) and situationally determined (objective) (Snee and Devine, 2015). Drawing on Bourdieusian concepts, the experiences and information that guide pragmatically-rational decision-making are necessarily shaped by differential capitals and class habitus, but individuals remain agentic players who respond rationally to the

'horizons for action' available to them (Delay, 2022; Hodkinson and Sparkes, 1997; Snee and Devine, 2015). In many ways, this represents a derivation of rational action theory, however, Hodkinson et al. somewhat temper the potential determinism of this perspective by suggesting that young people not only respond to the resources and opportunities within reach, but incorporate 'personal perceptions of what is possible, desirable or appropriate, […] derived from their culture and *life histories*' (Hodkinson et al., 1996: 123, emphasis added) to negotiate career choices, and lifestyle formation beyond school and work (drawing here on Giddens, 1991). As such there is an opportunity for perceptions that derive from more individual factors or dispositions to play their part in the generation of a 'rational' response. Further emphasis on the role of serendipity/contingency also makes space for unpredictability in the opportunity structure, while still acknowledging that capacity to capitalise on serendipitous events may be mediated by class-based access to resources (Atkins, 2017; Hodkinson and Sparkes, 1997).

Karen Evans (2002; 2007), meanwhile, suggests the concept of 'bounded agency' as a useful way forward. Contesting dualistic conceptions of structure and agency, she instead highlights their 'interfusion' and describes 'agency as a socially situated process, shaped by the experiences of the past, the chances present in the current moment and the perceptions of possible futures' influenced by 'a number of boundaries or barriers that circumscribe and sometimes prevent the expression of agency' (Evans, 2002: 262). Interestingly, despite the notion of interfusion, 'bounded agency' appears to rely on an understanding of agency as resistance, transgression, or change and not something equally capable of reproducing the social status quo while remaining conceptually distinct from structure – as if human behaviour ceases to be agentic once it becomes conformist (Coffey and Farrugia, 2014). Evans characterises the bounded agency framework as particularly useful for addressing the disjuncture between macro-level theory and data suggesting that young people's transitions are highly structured, and optimistic subjective accounts from young people about their sense of control over their own futures. In particular, it provides a means of identifying which 'boundaries' might be acted upon through policy means to improve the lives of young people, paying particular attention to subjectivities, interlocking social relationships, and 'the "lived realities" of young adults experiencing the multiple transitions and "status inconsistencies" in their lives' (Evans, 2002: 253), pointing to holistic and longitudinal studies as one methodological means of doing so.

The final theoretical approach to be examined here is that of intersectionality. Emerging from Black feminist scholarship (Crenshaw, 1990; Hill Collins, 2015), intersectionality highlights the interconnected mediations of different facets of social identity (race, class, gender, disability etc.) on the life courses and experiences of all people. In essence, structures matter, but they are

complex, overlapping, malleable, and not totally predictable, and, drawing on post-structuralist scholarship, multi-faceted discourses and ideas about identity that circulate in society have meaningful, material consequences. At different moments and in different contexts, people may be able to mobilise particular aspects of their identity in order to alter the structure of power relations around them or find that multiple axes of oppression compound their circumstances. Age is another intersectional axis of note, drawing attention to the normative and legal frameworks that construct identities and experiences of childhood, youth, and young adulthood (Bessant et al., 2020; Furlong et al., 2011). Consideration of intersectionality has been highlighted as an important progression for youth studies theory, counteracting a tendency to see youth as a monolithic group or focus exclusively on one axis of social positioning at a time (McLaughlin, 2023; Moore et al., 2021). While not an adequate explanatory account of structure and agency on its own, intersectionality provides an important lens for combination with other social action theories that recentres the complexity of inequality and avoids simplistic erasure of intra-group variation and marginalisation (Merino and Miranda, 2022).

4.3. Selecting a conceptual framework

4.3.1. Initial considerations

In the previous chapter, I highlighted the lack of attention that has been given to the effects of dVET transfer on youth transitions in LMICs. As such, this thesis addresses an overarching aim of *understanding the impacts of transferred dVET programmes on the youth transitions of students in LMIC contexts* – in this case, Mexico. I also discussed how the empirical tradition of youth transitions research could enrich knowledge about dVET policy transfer and how the case of dVET transfer in Mexico could deepen and refine wider youth transitions debates. In this chapter thus far, I have outlined some of the prominent theoretical traditions within the sociology of youth transitions, their approaches to conceptualizing structure and agency, and the research questions they are best suited to address.

On the basis of this discussion, I outline the conceptual framework used in this thesis, based on its potential to usefully respond to the research aim outlined above. Within this aim, there are three principal considerations that the chosen conceptual framework must be able to attend to:

1. ***Multi-scalar context:*** the research aim contains an interest in four scales/facets of context that matter for how transferred dVET programmes function: i) the global and postcolonial context of North-South policy transfer and development cooperation; ii) the

national/regional context(s) of political economy, labour market, educational offer, policy structures, cultural norms, history etc.; iii) the subjective, individual contexts of students' lived experience and identity; and iv) the temporal context in which each of these is embedded.

2. ***Holistic conception of transition:*** the reference to 'youth transitions' is intended to account for the many forms of transition that can take place in the upper secondary education phase and beyond, not only those related to education and work. The chosen framework also needs to account for family relationships, age norms, identity formation, belonging, reflexivity/self-knowledge, and more, as each of these can be important mediating factors in the functioning of youth/educational policies.
3. ***Impacts on students:*** this research exercise is fundamentally concerned with the impacts on, and experiences of, young policy participants. Therefore, it requires a theoretical framework that accounts for the specificity of youth as a state, identity, and social position and that highlights the diversity of backgrounds and experiences contained within any youth cohort.

Furthermore, this research is intended to contribute to postcolonial scholarship, not in terms of deploying 'postcolonial theory' as a specific movement connected to post-structuralist thought (Crossley and Tikly, 2004), but in terms of recognizing the enduring colonial legacies that intercede in this research area and project (Takayama et al., 2017; Quijano, 2000). Firstly, as indicated above, dVET transfer is bound up in postcolonial relations of knowledge-power that permeate the global education policy space (Bhambra, 2014; Connell, 2007; 2014). Examining this in greater depth will be a central task of this research project; one already initiated in chapter two. Secondly, the Global North-South dynamic contained within this specific research project – namely, a Northern researcher, funded by a Northern research council, on behalf of a Northern University, investigating a policy in the Global South and conducting research with Southern youth – warrants careful consideration (Takayama et al., 2017; Tikly and Bond, 2013). One means of doing this is through the use of contextually-relevant and -embedded theoretical frameworks (Connell, 2007; 2014; Epstein and Morrell, 2012). As discussed in chapter three, much of the most influential academic work on youth transitions takes place in high-income countries and deploys theory developed in those contexts (Nilan, 2011). While this does not preclude such thought from bringing explanatory value to social phenomena elsewhere, it does imply the need for appraisal and recontextualization. Furthermore, exploration of theoretical developments made in response to LMIC contexts could provide more relevant frameworks for consideration (Epstein and Morrell, 2012; Nilan, 2011). Finally, a critical regard for coloniality implies an awareness and sensitivity to whose stories and whose knowledge is heard and valued within postcolonial contexts. As such, a theoretical

framework will be needed that pays close attention to questions of voice, power, and subjectivity in global context (Tikly and Bond, 2013).

4.3.2. The Grammars of Youth

The conceptual framework adopted in this thesis – *La Gramática de la Juventud/The Grammars of Youth* – was conceived based on longitudinal research into young people's school-to-work transitions in Argentina (Miranda and Corica, 2018) and is intended to more accurately account for the contextual realities of Latin American youth than the frameworks offered by Global North youth studies alone (Batan et al., 2020; Bendit and Miranda, 2017; Miranda and Alfredo, 2022; Miranda and Corica, 2018). Reworking Sven Mørch's (1996) 'activity structure', the authors employ the linguistic metaphor of 'grammars' to describe the 'system of rules and interactions in which people were writing their biographical journey along the transitions towards adulthood' (Miranda and Alfredo, 2022: 236). This perspective, grounded in a feminist political economy of youth and particularly interested in how ostensibly 'external' forces influence young people's lives, implies a tendency towards structuralism. However, the 'grammars' metaphor provides much-needed nuance. As in language production, while structures of grammar provide rules and directions for the communication of meaning, an incredible complexity and diversity of self-expression is possible within those 'rules'. As Bendit and Miranda (2017: 35, author's own translation) describe; 'grammars make up a structured system that allows for infinite sentences (biographies)'. In addition, language is a deeply social, interactionist process, and so, interrelationships of diverse kinds (family, subcultures, neighbourhoods, friendships, religion, technologies etc.) are all relevant components of The Grammars of Youth, in addition to school and work. This holistic conception of what constitute structuring forces accounts for the destandardisation highlighted by modernity theory: traditional social categories are not taken as wholesale starting points, but the inequality that persists in a context of destandardisation is still investigated as a structural issue, rather than one lying with the biographical choices of young people themselves. As Woodman and Bennett (2015: 10) aptly summarise:

> Young people are able, and being asked, to redefine social structures for themselves in our contemporary conditions. This is not, however, because social structures have disappeared, or even diminished in their power, but because the contradictions to be juggled have increased […] To see the everyday and less spectacular biographical work that goes on in the gaps between clearly defined transitional events or cultural practices, to create and hold together a life, is essential for a convincing account of young lives.

More broadly, like language, 'grammars' are contextually located in time and space, such that the structures of relevance in one context cannot be presumed to transpose onto another. Drawing on

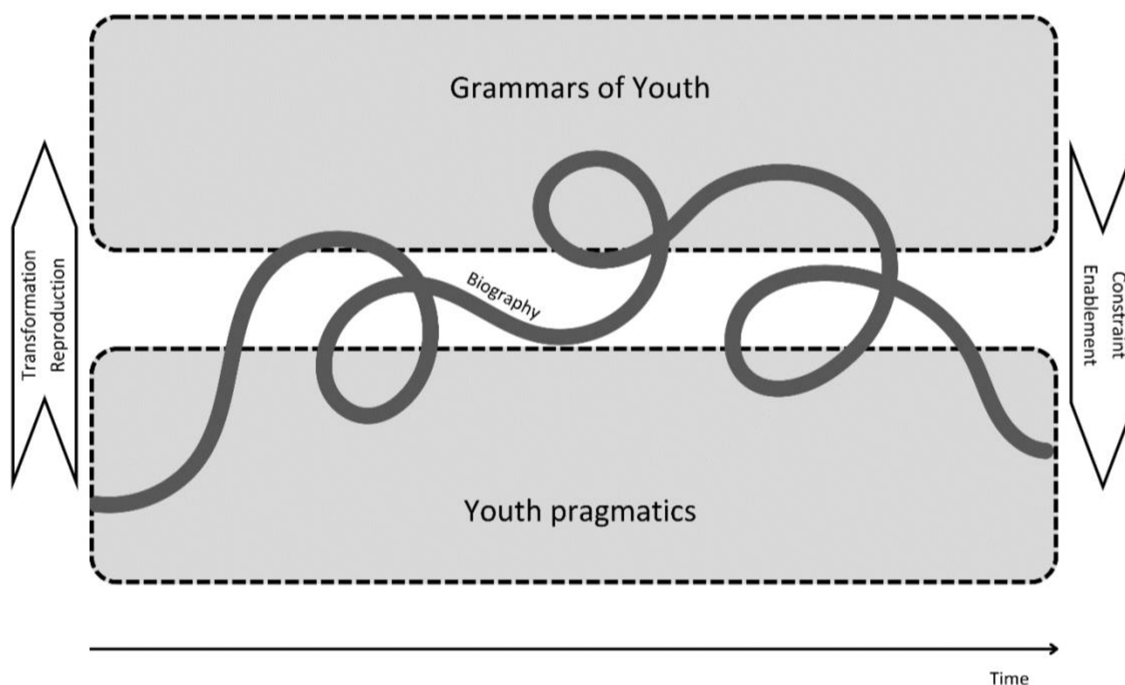
the work of Mannheim (1952) and the concept of social generations in modern youth studies (Furlong et al., 2011; Woodman and Leccardi, 2015), the authors emphasise the relevance of a shared cohort experience that emerges out of such temporal situatedness, whilst still acknowledging that different 'grammars' exercise varying influence over the lives of diverse individuals within a generation. Furthermore, young people situated in the same time and space as their adult counterparts experience 'grammars' differently and are subject to youth-specific norms and expectations (as with youth linguistic expression). This speaks to the socially-constructed and materially-constituted distinctness of youth seen in political economy of youth perspectives (Côté, 2014).

The authors outline how such a framework accounts for the role of young people's subjectivities and agency by highlighting the creative and personalised ways in which individuals can respond to the 'grammars' surrounding them (Bendit and Miranda, 2017; Miranda and Alfredo, 2022).[13] As with language, rules can be broken, stretched, reworked; sometimes resulting in social costs and marginalisation, other times altering the shared social fabric. They can also be consciously and unconsciously reproduced, as young people seek to progress, conform, or make themselves understandable to society. These responses and agentic actions come together in young people's strategies for transition, which combine their knowledge and assessment of the options and resources available to them with their own self-perceptions and self-interests to form 'youth pragmatics' (Bendit and Miranda, 2017; echoing the pragmatically-rational decision-making of Hodkinson and Sparkes, 1997). In the authors' own words:

> It is in the context of these social relations and moments of institutional contact, which can be cooperative or confrontational, that young people build their own lifestyles, languages and youth cultures or sub-cultures, and it is in relation to their experiences of these institutions that young people create their individual and collective representations and imaginaries regarding their integration or exclusion.
>
> (Bendit and Miranda, 2017: 33, author's own translation)

In my view, this framework draws implicitly on Margaret Archer's (1995) analytical dualism to describe the relationship between structure and agency, which assigns *sui generis* properties to structure and details a temporally-constituted relationship of constraint/enablement-transformation/reproduction between the different levels of the dualism (see Figure 2).

[13] Agency here understood in the neutral sense of action/choice of any kind, as opposed to exclusively as resistance to structural forces (Coffey and Farrugia, 2014).



Source: Author's own elaboration from (Archer, 1995; Miranda and Alfredo, 2022; Miranda and Corica, 2018)

Figure 2. Diagrammatic representation of the Grammars of Youth framework

In some regards, The Grammars of Youth finds echoes in Bourdieu's concept of habitus. Indeed, the related concept of capital may be a fruitful means of describing the material and non-material resources that assist or hinder young people as they write their personal biographies. Nonetheless, there are important distinctions between the two approaches. While habitus is conceived as an individualised liminal zone between structure and agency, in which the life experiences of a person accumulate to produce particular dispositions and tendencies, the Grammars of Youth attempts to theorise a more generalised picture of the state of structures that hold particular relevance for young people's life course construction. If anything, it attempts to map the field of youth. This is not to suggest uniformity of experience or outcome among a cohort: particular grammars will be experienced differently by different people and young people's agentic action can be reproductive or transformative of norms and expectations. Neither, however, does the Grammars of Youth framework view structures as generating a cumulative tendency towards particular choices or actions within an individual (as habitus does). Instead, young people are conceived as adopting and adjusting strategies and making choices (youth pragmatics) on a continual basis that respond to the structural influences in their lives, but that are not determined by them.

I return now to the three analytical parameters discussed in section 4.3.1 identified as fundamental to satisfying the research aim of this thesis, namely: an attention to multi-scalar context, a holistic conception of transitions, and prioritising impacts on young people. The Grammars of Youth

framework provides a means of satisfying all three. Firstly, the research aim – *to understand the impacts of transferred dVET programmes on the youth transitions of students in LMIC contexts* – contains a fundamental interest in context, and, therefore, structures. dVET programmes have been found and/or assumed to produce particular impacts on youth transitions in their original contexts; this doctoral research project is interested in how a change of context in which the programme is enacted might alter the impacts it produces on youth transitions, particularly when that context is in an LMIC. Therefore, a framework developed with the aim of taking robust, but holistic, account of the structural environment that surrounds young people in Latin America appears particularly suitable. As Wyn and White (2015: 36) underline:

> the tendency to focus on transitions of self over transitions of society in youth research robs us of the capacity to really understand how inequalities are produced and what to do about it. Instead of addressing the crucial issue of how social institutions recognize the increasing diversity and complex lives, the policy response is to put the onus on individual young people and their families to conform or reform.

The Grammars of Youth considers normative, economic, cultural, political, social, geographical, temporal, technological, and other factors that make up the multi-scalar context in which young people live out their transitions, and thus provides a means to attend to complexity without forgoing structural analysis. Secondly, the framework sets out with a holistic understanding of transition. While the object of study that produced this framework may have been school-to-work transitions (Miranda and Corica, 2018), it integrates an understanding that 'transition' takes place in relation to a whole range of social institutions, norms, and relationships that extend far beyond the spaces of school and work, and that these must be considered in the design of policies aiming to affect young people's pathways to adulthood (Bendit and Miranda, 2017: 34). Finally, the framework is specifically developed for and focused on the experiences of young people, and, while not strict in its definition of 'youth', treats it as a distinct social position warranting specific theorisation. In their own application, Miranda and colleagues particularly focus on the intersectional influence of this normative definition of youth, the economic structures of capitalism relevant to young people, and gender norms and the sexual division of labour (Miranda and Alfredo, 2022; Miranda and Corica, 2018). In fact, the holistic and conceptually inclusive construction of the framework makes it particularly amenable to an intersectional view of inequality and the divergent effects that policies can produce for a diversity of young people.

In sum, the Grammars of Youth framework is most effective at providing an overarching view of the relationship between structure and agency in youth transitions and directing attention to the complexity and specificity of the diverse contexts in which youth policies operate. What it does not provide is detailed explanation of how specific structures operate and of how youth agency may

manifest and with what consequences (see further discussion of limitations in section 10.5). Therefore, this thesis makes use of theoretical bricolage when discussing and analysing the data and findings. There is no one set of theory that can explain all of the social, cultural, political, economic, educational, and policy dynamics that impact on dVET transitions in Mexico. Instead, the Grammars of Youth framework is used to help ask the most pertinent questions, and a variety of theoretical tools are used to provide answers that capture individual strings of the broader tapestry. Looking at those detailed explanations as a collective – weaving them together – then provides a broad picture of what it means to be a young person constructing their biography in a specific context (Neale and Flowerdew, 2003), and allows more nuanced consideration of which policy approaches are likely to produce the results desired by policymakers and young people. It also provides a means of evaluating the extent to which the assumptions contained within global policy norms 'hold up' when confronted with the lived experiences of young people in LMIC contexts that are rarely considered in the generation of policy narratives and tools (Vanderhoven, 2023).

Indeed, returning to the postcolonial positioning of this doctoral research project, the Grammars of Youth offers a valuable contribution in that regard. The framework was specifically developed in response to the inadequacies of Western youth transitions and youth studies frameworks for understanding youth experiences in Latin America (Batan et al., 2020; Miranda and Alfredo, 2022). As such, it can contribute to a conscious revitalisation and contextualisation of knowledge about young people's lives in postcolonial settings (Batan et al., 2020). Furthermore, it is fundamentally engaged with questions of voice, power, and subjectivity in investigating the lives of young people in postcolonial settings. The Grammars of Youth provides a means of detecting and exploring the role of (local, national, global) structures while still foregrounding the individual and collective biographies of young people. It frames young people and their accounts of their lives and their societies as the primary window into the functioning of social forces that intercede in youth transitions, and as the most important way to generate knowledge about how policies, such as dVET, might produce positive and equitable outcomes for young people (Neale and Flowerdew, 2003). As such, it generates forms of knowledge that are typically underrepresented and under considered within the knowledge-power structures of global education spaces. This knowledge can be used to contest and enrich our understanding of what dVET can achieve across diverse international settings and challenge the global knowledge hierarchies that underpin policy transfer.

4.4. Concluding comments

In this chapter, I have reviewed some of the most prominent approaches to theorising structure and agency within youth transitions research. In the process, I have reflected on which questions these

different theories are best equipped to answer and which of these questions best align with my own research aims. I have advanced the Grammars of Youth as a particularly suitable framework because of its attention to the complexity of context, its primary interest in youth experiences, and its capacity to hold in productive tension the enduring relevance of social structures and the almost infinite creative capacity of young people's agency through the twin concepts of 'grammars' and 'pragmatics'. It incorporates many elements of the different theories reviewed in section 4.2, borrowing from the political economy of youth, careership, critical realism, and intersectionality (Merino and Miranda, 2022). Furthermore, the notable integration of a social generation perspective brings attention to the relevance of temporal and geographic context in shaping the activities and identities on offer to young people. In response to this contextualised environment and enacted through everyday choices and practices, young people set about constructing their biographies over time (Neale and Flowerdew, 2003). Longitudinal study therefore appears particularly apt as a means of investigation using this framework: individual snapshots capture everyday life *in situ*, cumulative snapshots begin to sketch out a biography (enhanced by recounting and reconstructing past events and predicting and aspiring to future ones; Neale and Flowerdew, 2003), and the collective biographies of a cohort offer insights into generational experience (Merino and Miranda, 2022). The following chapter explores in greater depth how this framework is operationalised as part of the broader methodology of this doctoral research.

5. Methodology

5.1. Introduction

The analysis contained within this thesis is based on three waves of longitudinal repeat interviewing with 16 participants of the Modelo Mexicano de Formación Dual (MMFD) living in Coahuila, Mexico, conducted between February 2020 and February 2022. This chapter outlines the reasons for the selection of that methodology and details how data were collected and analysed.

The first section of the chapter handles theoretical groundings. I first outline the ontological and epistemological stance that informs my research practice. I then discuss how this informs my choice of a qualitative longitudinal research approach. I continue with a reflexive exploration of my researcher positionality, and some (select) ways in which this intervened in the research process. The second section focuses on research design, first demarcating the original contribution of this doctoral project and then detailing sampling techniques, ethical considerations, interview methods, and data analysis.

5.2. Theoretical groundings

5.2.1. Ontology and epistemology

This doctoral project is grounded in a critical qualitative research tradition (Braun and Clarke, 2022). As such, it is concerned with detecting, interrogating, and explaining patterns of meaning in the social world, rather than seeking to straightforwardly understand and reflect the 'voice' of participants (Willig, 2017). My research is therefore informed by a hermeneutics of suspicion (Ricoeur, 1970: 32-3): I aim to interrogate and unpack claims made in data of different sorts (e.g. see chapter two). Doing so requires theory that supports the detection of patterns between cases and datasets and which offers explanatory insights into *why* those patterns exist, what they tell us about social life, and how we might intervene in causal mechanisms should we wish to do so (Braun and Clarke, 2022; Willig, 2017).

This connects to a critical realist ontology (Maxwell, 2012). I take the stance that every social being possesses a distinct perspective and subjective inflection on the objective reality that we all inhabit. I hold a fundamental interest in the materiality of the world and how that influences and shapes our subjective experiences and perceptions of it. I am, however, no more capable of accessing this

objective truth than participants are capable of representing it (Braun and Clarke, 2022). Equally, critical realism would contend that the cultural and linguistic representations that we construct individually and collectively exist in a co-constructive relationship with that objective reality (Best, 2007; Hall, 1997; Maxwell, 2012). As such, this stance incorporates something of a constructivist epistemology, seeing all knowledge as produced from a distinct vantage point and interwoven with theoretical assumptions (Maxwell, 2012).

My epistemological stance is further informed by contextualism (Braun and Clarke, 2022). I would contend that social beings and social action cannot be studied in isolation from their context and that the validity of knowledge divorced from context is severely undermined. Theorisation is therefore a central task of data interpretation, connecting together the surrounding social context with individuals' linguistic and cultural representations of their experiences to produce explanatory accounts of the social world (Mjøset, 2009). This also therefore points to the political and ideological nature of research itself: research knowledge cannot be fully separated from the knower that produced it (although it can point to an underlying 'logic' of social practices, particularly when considered as a body of knowledge) (Madill et al., 2000; Mjøset, 2009; Shields and Paulson, 2024). As a result, reflexivity and consideration of researcher positionality become important tasks to render visible the context that helped produce particular knowledge (Best, 2007; Jacobson and Mustafa, 2019). With this information, audiences can make their own judgements about how convincing and useful the account of 'underlying logics' appears to them (see section 5.2.3 for this discussion). As Braun and Clarke (2022: 179) describe, I am seeking a 'provisional, contextual, and liminal truth' that can particularly assist in detecting forms of injustice, and offer means of intervening to make people's social and material lives fairer and more fulfilling.

5.2.2. Qualitative longitudinal research

In this section, I consider that ontological and epistemological position in relation to the research aim outlined in chapter three – *understanding the impacts of transferred dVET programmes on the youth transitions of students in LMIC contexts* – to arrive at a suitable and congruent methodological approach to gathering and interpreting data (Archer, 1995; Braun and Clarke, 2022).

As discussed in chapter three, there is a comparative wealth of research that looks at institutional-level outcomes of dVET programmes in LMICs. To strengthen our research knowledge and diversify knowledge-perspectives, this study is very consciously concerned with *young people's* accounts of policy impacts, as these have been far less explored. Nonetheless, the aim in conducting research with young people is not only to give them a 'voice' in these debates, but also to use their accounts

to interrogate and theorise how dVET programmes function in the specific contexts where they are implemented. In focusing on youth transitions as one specific facet of dVET's functioning, *time* necessarily becomes of central importance to the project. Given this tripartite interest in: i) youth perspectives; ii) rich, contextualised data leading to critical theorisation; and iii) temporality, qualitative longitudinal research (QLR) is pursued as a particularly suitable methodological approach.

An increasingly established approach within youth studies and broader social research (Furlong et al., 2011; Neale et al., 2012; Thomson and McLeod, 2015), but less well applied in development studies and to the question of youth skills (DeJaeghere et al., 2020; Morrow and Crivello, 2015), QLR takes account of the importance of time in learners' educational experiences, recognising that single snap-shots may obscure important evolutions or fluctuations in perspectives and self-understandings (DeJaeghere, 2018; Morrow and Crivello, 2015; Thomson and McLeod, 2015). Furthermore, it offers a means of tracing youth transitions, not only in the most obvious sense of progressing through and exiting an educational programme, but in the broader sense of movement through significant moments of personal and professional change (Corden and Millar, 2007; DeJaeghere et al., 2020; Neale and Flowerdew, 2003). Given that arguments mobilised in favour of dVET predominantly focus on *what happens next* for dual learners, longitudinal research appears as a particularly pertinent methodological approach for testing the claims made about the impacts and benefits of the policy (Lewis, 2007a). The qualitative component supports gathering rich, experiential data about dVET programmes, including experiences, priorities, attitudes, interpretations, and motivations (DeJaeghere and Lee, 2011; Morrow and Crivello, 2015; Neale and Flowerdew, 2003). Combining those qualitative and longitudinal properties, QLR supports exploration of 'subjectivities within crossnational approaches, illuminating the intersections between structural factors and individual lives in time' (Morrow and Crivello, 2015: 268). The persistent absence of young people from knowledge about dVET in LMICs further suggests that while quantitative longitudinal studies may glean interesting insights, the time is long overdue for young people to be given space to express their perspectives in their own words (Neale et al., 2012).

This research project specifically employs repeat semi-structured interviews (Corden and Millar, 2007). However, it is important to note that a focus on longitudinality extends beyond simple repetition of interviews, instead encompassing 'the deliberate way in which temporality is designed into the research process making change a central focus of analytical attention' (Thomson et al., 2003: 185). This incorporates an interest in biographical, generational, and historical time (Neale et al., 2012) and a temporal conception of agency that seeks to explain the strategies, negotiations, and approaches to change management that young people employ (Thomson and Holland, 2015).

As such, my research questions (see section 5.3.2) explicitly probe development and explanation over time (Neale et al., 2012). Furthermore, the various waves of interviews are designed to capture contemporaneous accounts from participants at several 'vital conjunctures' (Jeffrey, 2010; Johnson-Hanks, 2002) in order to prevent retrospective re-telling and re-configuration of feelings and motivations that have been moulded by intervening events and experiences.

The three captured 'vital conjunctures' are (see Figure 3): i) approaching completion of upper secondary schooling/the MMFD; ii) having graduated from the MMFD and making choices about next steps; and iii) more than a year after graduation having typically 'entered' one onward pathway or another. Importantly, these very individual moments of choice and change are structured by the surroundings institutions and contexts. In this first description, these are shaped by educational structures and the concept of the school-to-work/further-study transition. They can also be framed in related to socio-legal majority at 18 years old (see Figure 3), which alters an individual's access to particular rights and services and signals new expectations and responsibilities within the family (Neale and Flowerdew, 2003). Set in broader temporal context, these moments also transpose onto 'vital conjunctures' in the Covid-19 pandemic that first hit Mexico in early 2020 (see Figure 3): namely, i) people in Mexico are generally aware of the Covid-19 virus, but preventative measures are only just being introduced; ii) full lockdown is established, but the first vaccine has yet to be developed and distributed; and iii) lockdown restrictions have been removed, but general sanitary measures remain, most young people have been vaccinated at least once, workplaces and universities are reopening. As such, the moments captured in this doctoral research are pivotal on a number of contextual levels (Neale et al., 2012), extending from global economic conditions to national public health restrictions, to regional structuring of education transitions, to familial and personal changes in circumstance.

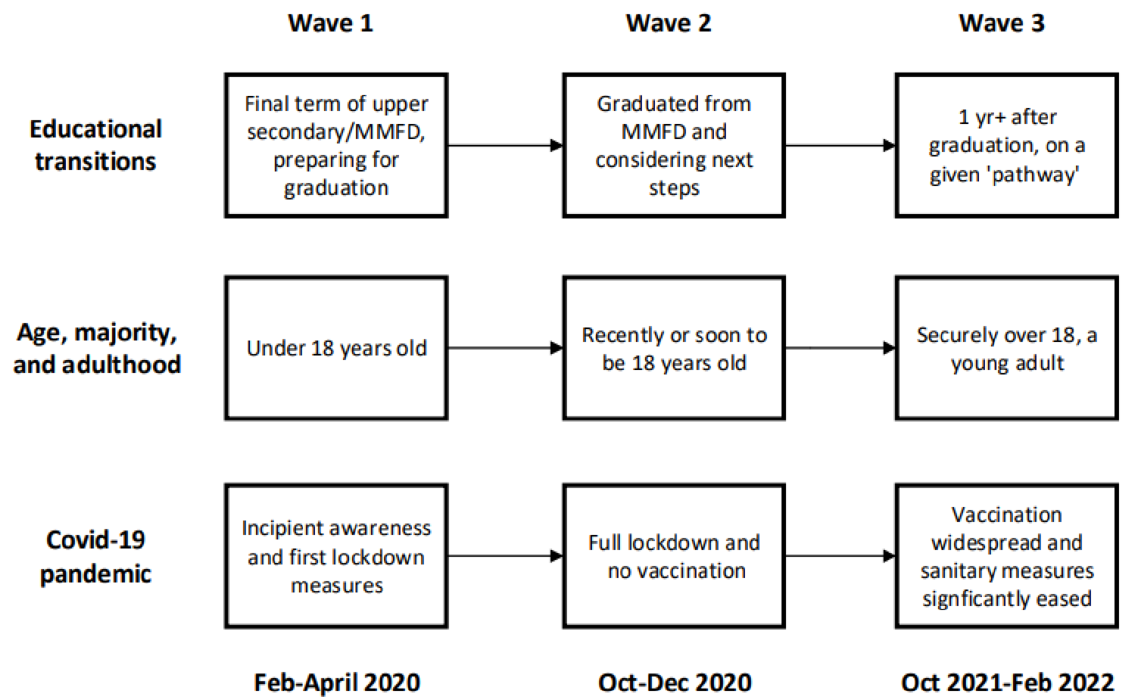


Figure 3. Interview waves as vital conjunctures for research participants

5.2.3. Reflexivity and positionality

Continuing the discussion of epistemology and ontology started in section 5.2.1, in this section I begin by defining reflexivity and positionality and outlining why they form such an integral part of my approach to research.

Reflexivity has emerged within qualitative research theory and practice as a reaction against positivism and its pursuit of objective 'truths' about the social world (Moser, 2008; Pillow, 2003). This critical approach to knowledge production, driven forward by feminist and postcolonial theorists (e.g. England, 1994; Hall, 1990; Rose, 1997; Spivak, 1988), recognises and seeks to uncover the ways in which our identities, preconceptions, values and more shape how we frame, conduct, and interpret research (Pillow, 2003). Collectively, these myriad subjectivities resulting from personal histories and experiences have been termed researcher *positionality*, underlining the need for meaningful attention to various researcher/researched dynamics and interactions that mediate knowledge production (Lamoureux, 2011; Pillow, 2003). Practising reflexivity is thus crucial to revealing the implications of positionality for knowledge production and equipping research audiences with the tools to scrutinise the quality and trustworthiness of that knowledge (Giampapa and Lamoureux, 2011). Importantly, this should not be an add-on activity that occurs at the end of a project, but an on-going, iterative, and self-adjusting process that is embedded within the design, execution, and analysis of research (Giampapa and Lamoureux, 2011).

Such an interest in positionality is especially acute in the case of my research, which involves a Global North adult researching Global South youth and is thus immediately embedded within power relations that have been historically, institutionally, and enduringly based on domination (Best, 2007; Day, 2014; Rankin, 2010). As a result, the following paragraphs contain (a small sample) of ongoing reflections about myself, the myriad actors involved in my research (not limited to participants), (my interpretation of) how we relate to each other and what implications this might have for my research. For me, keeping a research diary is an integral component of supporting reflexivity – providing a rough, informal, and personal space in which to honestly capture thoughts, feelings, hunches, and questions and chart their evolution over time (Li, 2018; Nadin and Cassell, 2006) – and I draw on extracts in this discussion.

The process of preparing to 'enter the field' for the first time is always complex and often fraught. At that time, I was particularly concerned by how my positionality was going to shape the data collection process. Unlike most PhD students, my links to a pre-existing project (see section 5.3.1) offered pre-negotiated, systemic access to education institutions and young people. As a result, when I arrived in schools and offices, I carried the official rubber stamp of the project, the University of Glasgow, and British academia in general, further reinforced by my whiteness and noticeably British accent (Dam and Lunn, 2014). In this respect, my elite outsider status worked as a significant advantage in the access process. This is however not a comfortable fact. I was aware of the enduring colonial dynamics that eased my access and felt when I would position myself, or be treated as, an 'expert' – as much on the basis of my skin tone, accent, and Global North signifiers as any real credentials – I was implicitly reinforcing 'the privileged and exploitative relationship so characteristic of colonial relationships' (Dam and Lunn, 2014: 105; see also Skelton, 2001).

In preparing for wave one data collection, I decided to present on the topic of positionality to a group of my postgraduate students. As a result of my reflections and the ensuing discussion, I began to experience serious self-doubts. The following research diary extract is from shortly after the presentation:

> *Doubts about my suitability to conduct the research had already been fomenting in my head and I took the last-minute decision to pose the following question to the group: should someone like me be conducting this research? No one said explicitly no, but there was an uneasiness in the room and I was certainly challenged: people asked about my capacity to truly understand and be allowed into people's interior lives when I am so 'foreign' in all senses. Another struggled to comprehend how I could judge myself ready/capable of conducting the research in Spanish, saying that if it were her, she would never be ready to make the choice to forgo an interpreter. We did also discuss the ways in which my 'outsiderness' might actually help the research, but I didn't feel like the students were wholly convinced of this aspect […] by the end I felt the same.*

I set off to Mexico to begin my research in this frame of mind. Having aimed to practice self-scrutiny without succumbing to paralysing self-doubt (Joseph-Salisbury and Connelly, 2021), I was slipping into the latter. These less clear-cut considerations were churning away in the background as I made some of the methodological choices laid out in section 5.3.

> Reflexivity is not about ‘you, the ethnographer’; it’s still about ‘them, the participants’.
> (Madden, 2010: 23)

This quote came to summarise my feelings about reflexivity after conducting my first wave of fieldwork. Whereas before my first trip to Mexico, an overwrought attempt to map my positionality had left me agonising over my suitability for the research, afterwards I reached a more balanced ‘acknowledgment of the varied positionalities we self-ascribe *and are ascribed by our participants* as we *negotiate* relationships in the field’ (Lamoureux, 2011: 210, emphasis added). I realised that my lack of contextual knowledge had fuelled my anxieties, not knowing enough about the codes and norms by which others would understand and interpret me. Ultimately, how gatekeepers and participants perceived and received me was more important than (and different from) the things I thought about myself.

In practice, personality came to be an important component of how I related to participants and gatekeepers (Moser, 2008; Smith, 2014). The ability to be warm, engaging, interested, compassionate, and welcoming to young people had a big impact on my rapport with participants, thrown into relief by the days where fatigue and stress made this harder (particularly in Spanish) and connections did not feel so strong. While I had been concerned that outsider elite status might be intimidating or intrusive to young people, the majority were flattered and gained confidence from ‘someone like me’ being in their community, interested to hear them speak about themselves and their struggles at length – although I am not unaware of the particular hierarchies this reproduces (Dam and Lunn, 2014). Simultaneously, my relative youth and association with the glamour of anglophone pop culture positioned me differently from other education professionals and even my fellow researcher (see section 5.3) in the eyes of young people, who were interested in the clothes I wore and asked for selfies at the end of interviews.

I also learned that my relationship with gatekeepers was more reciprocally exploitative than I expected. The arrival of a foreign researcher brought out photographers, chief executives, and more as my presence garnered prestige to individuals and institutions (Adams, 1999; Pérez-Milans, 2011). Adams (1999) describes this as a ‘mascot-host’ relationship, characterised by an exchange of

prestige, talent, information, and access between the two parties. This being said, I also greatly benefitted from working with Mexican colleagues who were able to deftly deal with practical issues and who provided an irreplaceable source of reflection and collaboration (Caretta, 2015; Ozano and Khatri, 2018). By bringing together opposing components of insider/outsider status (man-woman, local-foreigner, educator-technocrat etc.) we were able to challenge each other's assumptions and push our nascent analysis in richer directions (Dean et al., 2018).

My gender and feminist orientation proved a further important facet of the research. Having conducted wave one and two interviews in tandem with a male researcher who did not have a primary interest in gender, and wave three interviews alone, I saw the role my presence played in eliciting narratives (from both male and female participants) about how gender interacted with their youth transition experiences (Le Masson, 2014). Conversely, when dealing with adult actors, it was very useful to have my male, Mexican colleague to handle negotiations and relationship-building as senior male gatekeepers treated me differently based on my gender (Kovàcs and Bose, 2014).

As previously noted, these reflections are just a selection of the many ways in which I felt the effects of my own positionality and that of the actors involved in my research once engaged in the 'doing' of data collection. Furthermore, given the longitudinality of the study, both sides of this complex web of relationships evolved as my own life course proceeded alongside those of participants (Neale, 2013; Neale et al., 2012). Nonetheless, I left the first stage of fieldwork with a more balanced appreciation of relational reflexivity that supports productive self-awareness and avoids reflexivity as narcissism and/or paralytic self-doubt (Lamoureux, 2011; Rankin, 2010). I took this awareness with me into the second and third waves, and, while reflection and evolution of ideas did not stop, I found sufficient foothold to approach my research with more confidence.

Looking beyond data collection, as a non-native speaker of Spanish, in reading, transcribing, and analysing my collected data, there is space for misunderstanding and mistranslation to occur, altering the conclusions I draw and how I represent the experiences of my participants (Gent, 2014; Giampapa and Lamoureux, 2011). Therefore, I deliberately left considerable time before the final, independent wave of data collection in my research design. This allowed me to observe my colleagues conducting similar interviews (and pilot many of my own questions in Spanish), complete additional language training, and undergo a period of cultural immersion prior to primary data collection.[14]

[14] The originally-planned period of three months prior to and during wave one data collection was curtailed to five weeks. I was unable to travel to Mexico again until wave three was underway. I conducted a number of wave three interviews (on Zoom) while I was in Mexico for knowledge exchange activities (one month) and I made a final research impact trip to Mexico in November 2022 (three weeks) (Roberts et al., 2021).

Furthermore, I approach research with a primary interest in social change, policy impact, and redressing inequalities. Although I do not experience the tensions of being an activist-turned-researcher working in my own community (Calderón, 2004), my interest in educational research stems from the frustrations of my own teaching career and trade union activity. Thus, on the spectrum between 'activist research' and 'cultural critique' (Hale, 2006) I tend towards a position of 'advocacy research' (Hondagneu-Sotelo, 1993), which 'aims to challenge societal inequality [...] including a social change orientation in both the research process and through the utilization of the research findings' (Hondagneu-Sotelo, 1993: 58). As such, this desire to effect change undoubtedly impacts how I relate to participants and interpret and present my findings. This is not something I wish to change, but requires reflexivity regarding self-censorship, framing findings to persuade different audiences, publication, and researcher-participant relationships (Day, 2014; Jones, 2014; MacKenzie et al., 2015).

5.3. Research Design

5.3.1. Research independence and originality

As discussed in section 1.2, this PhD makes use of data originally collected as part of the GCRF-funded project *Dual Apprenticeship*. The GCRF project spanned four regions across Mexico and India, investigating the dVET policy adoption process and exploring implementation from a wide variety of stakeholder perspectives.[15] This doctoral research project draws and builds upon one thread of that data collection – repeat interviewing with MMFD students in Coahuila, Mexico – to offer a medium-term picture of young people's post-MMFD transitions not possible within the lifetime of *Dual Apprenticeship*. Indeed, the two rounds of interviewing conducted under the auspices of the GCRF project constitute waves one and two of my own three-wave longitudinal study.

Joining the project shortly before wave one data collection, I participated in the development of research instruments and sampling techniques and was present in all but one of the interviews ultimately selected for analysis in this thesis (see section 5.3.5). The research design for waves one and two was that of the project, although my independent research interests inevitably influenced my approach as an interviewer. This points to a significant degree of entanglement between the aims, focus, and methodology of the project and this thesis, between my status as a project researcher and as an independent PhD student. There are undoubtedly ways in which the two are

[15] For more information, visit www.dualapprenticeship.org.

indivisible, or at least the PhD cannot be separated from the constraints and opportunities afforded by its relationship to the project. Nonetheless, this thesis represents an independent and original contribution that offers valuable new data and new angles of interrogation.

New data comes from the third wave of repeat interviewing, conducted a minimum of one year after participants had graduated from the MMFD. It therefore offers a longer-term perspective on the transition outcomes and experiences of dual graduates. It also provides an opportunity to see how participants' perceptions of the policy and its influence on their lives evolved over time on the basis of lived, rather than expected or projected, transition processes. The third wave of data collection was also designed according to the research priorities and sensibilities of this doctoral research project, rather than those of *Dual Apprenticeship*. *Dual Apprenticeship* employs a human development perspective, using the capabilities approach (Nussbaum, 2011; Sen, 1999), to advocate for greater attention to issues of social justice, inequality, and personal fulfilment in the design of policies that seek to promote social and economic progress, including education interventions (McGrath, 2012; Powell and McGrath, 2014). It also incorporates Realist Evaluation methodologies (Pawson, 2006; Tikly, 2015; Pawson and Tilley, 1997) to ask, in the case of dVET programmes, 'what works, for whom, and in what circumstances?', offering policy recommendations that guide reform towards human development priorities in a manner that is attentive to the contexts in which policies must function. This thesis meanwhile sits closer to critical youth studies: it pursues theoretical and empirical depiction of young people's experiences and lives in order to better understand 'youth' as a (heterogeneous) social experience (and, indeed, as a social construction) and critically unpack the intersecting power structures that young people are subject to, and exercise agency within (Best, 2007; Cieslik and Simpson, 2013; Furlong, 2012). It also draws heavily on the concept of transition (from education to work, from youth to adulthood etc.) to understand change and temporality within youth experience (Cieslik and Simpson, 2013). From that basis, I explore how a policy like the MMFD interacts with the contextualised social experience of youth, and how greater account of that contextual environment might help reformulate policy features to produce more effective and equitable outcomes.

5.3.2. Research questions

Thus, responding to the established aim of this research project – *to understand the impacts of transferred dVET programmes on the youth transitions of students in LMIC contexts* – the analytical framework outlined in chapter four, and the discussion found in section 5.2, I advance three research objectives (ROs) connected to five clusters of research questions (RQs):

RO1: To understand and explain the contextually embedded nature of youth transition processes for MMFD participants.

RQ1. Which Grammars of Youth are most relevant to the transitions of MMFD participants in Coahuila, Mexico? Why and how do these grammars manifest? How and why do they develop over time?

RQ2. What youth pragmatics do young people employ in navigating their youth transitions, including in relation to the identified grammars? How and why do these develop over time?

RQ3. How do these grammars and youth pragmatics interact with MMFD policy features to impact youth transitions? How and why does this develop over time?

RO2: To identify means of improving the youth transition impacts of the MMFD.

RQ4. In light of the grammatical context in which young people live, how might MMFD policy features be altered to make dual training more equitable and effective for young people in transition?

RO3: To contribute to global debates and understandings of apprenticeship/dVET policy transfer.

RQ5. How do the transition experiences and outcomes of MMFD participants compare to those discursively depicted within the global apprenticeship agenda? To what extent do these contest or reinforce global policy norms about the effects of apprenticeships?

5.3.3. Sampling

The *Dual Apprenticeship* project selected two Mexican states – Coahuila de Zaragoza (Coahuila) and Estado de México (Edomex) – as research sites for comparison. The two states were chosen for their distinct contextual conditions and dVET histories. Edomex is recognised as a pioneer of the dual model and has been experimenting with different forms of the programme for three decades (Gobierno del Estado de México, 2021). Indeed, more than a third of all dual students are trained in Edomex (SEP, 2022: 13). Its geographical location encircling much of the capital, Mexico City, gives the local economy a distinct character, dominated by manufacturing and hospitality/tourism, and the state is the second biggest contributor to national GDP (Castañeda, 2017). Edomex is also the most, and most densely, populated state in the country with nearly 17 million inhabitants (INEGI, 2022). Nearly half a million people in the state speak an indigenous language (INEGI, 2022) and it is known for its socio-cultural diversity, in part due to its economic attraction of migrants. Coahuila, meanwhile, had its first experience of dVET in 2013 as one of 11 pilot states for the MMFD (SEMS, 2017; 2022). The state is the second largest trainer of dual students after Edomex, with approximately 10% of the national student body (SEP, 2022: 13). Despite being the third largest state

in the country, it has just 3.1 million inhabitants (INEGI, 2022). Only approximately 5,000 inhabitants are native speakers of indigenous languages (INEGI, 2022) and it is a more socially homogenous region than Edomex. Coahuila shares over 300 miles of border with the United States of America and is heavily involved in manufacturing and trade with North American and global markets, particularly in the automotive industries. Torreón, the state's second largest city, is home to Peñoles – the largest Mexican producer of gold, zinc, and lead and the world's single largest producer of silver – and Lala – Mexico's largest producer of dairy products.

In the interests of feasibility, for this doctoral project I decided to focus on one of the two areas, given the large volume of data that three waves of interviews would imply. Coahuila was selected for two reasons: improved national policy relevance and the guarantee of some face-to-face interviewing. While Edomex presents an interesting case, its unique history of experimentation with dual sets it apart from most other states in Mexico. The experiences of Coahuilan students may thus be more helpful for gaining policy insights relevant to other areas of the country. Furthermore, as a result of the Covid-19 pandemic, the first wave of interviewing was interrupted and moved online. By this point, the majority of Coahuila interviews had already been completed face-to-face, but none of the Edomex interviews had begun. Unaware of how long restrictions might prevent me from travelling to Mexico again, I preferred to continue my independent study with those young people that I had been able to meet in person at least once, building a stronger rapport as a result (Newman et al., 2021; Roberts et al., 2021). As it transpired, that first encounter would be the only time I would interview students in person, as the pandemic continued to disrupt daily life and prevent international travel throughout the entirety of this study.

The *Colegio Nacional de Educación Profesional Técnica* (CONALEP) was selected as the sub-system under study for the GCRF project due to its involvement with the MMFD from the early 2013 pilot (SEP, 2022; see section 1.3). In addition, CONALEP trains approximately 85% of all dual students in Coahuila, therefore offering the only feasible forum for sampling a range of locations, students, and specialisms (SEP, 2022: 13). Two CONALEP campuses were selected for the *Dual Apprenticeship* study from among the nine in the state: one in the state capital Saltillo, the other in the second largest city, Torreón. The selection of campuses was based on a range of factors including MMFD student numbers, the range of specialisms offered, relationships with gatekeepers, and practical access concerns. These and all other initial sampling decisions were determined by the design and resource calculations of the *Dual Apprenticeship* project, although I was one of those on the ground in Mexico directing sample selection, and, as such, was able to emphasise sample features that were key to the future third wave (e.g. strong female participation). Initially, 30 students were selected for interview, aiming for a balance of location, economic area (industrial vs. service specialisms),

and gender as these were predicted to be primary axes of variation (Beitin, 2012). All students were intended to be in the final term of the MMFD, due to graduate in June 2020. This time point was chosen to gather students' perceptions of the programme whilst still enrolled and capture a contemporaneous account of students' aspirations and plans before the 'vital conjuncture' of graduation (see Figure 3), thus avoiding reliance on retrospective reporting of attitudes (Grinyer and Thomas, 2012). Furthermore, given the research interest in what happens to students that graduate from the MMFD, speaking to students in the final term minimised the possibility of participants exiting the programme before completion.

School leaders were given specialism and gender profiles to fulfil and had control over the invitation of individual students. While this produced obvious disadvantages in terms of potential sample bias (schools selecting better known or well-perceived students), this was an inescapable limitation of access and data protection constraints (see further discussion of limitations in section 10.5). Beyond wave one, CONALEP staff were no longer involved in the contact or interview process; participants were contacted on their private email addresses or WhatsApp and decided independently whether to continue to participate. Over the course of the first two waves, four students were removed as they had been incorrectly sampled by schools and did not belong to the correct cohort (the four removed participants were evenly distributed by location, economic area, and gender). Of the 26 eligible participants, 16 were retained until wave three. See Tables 3 to 6 below for further profile information.

Table 3. Breakdown of wave one sample by gender and economic area

	MALE	**FEMALE**	
INDUSTRIAL	13	10	23
SERVICES	3	2	5
TOTAL	16	12	

Table 4. Breakdown of wave two sample by gender and economic area

	MALE	**FEMALE**	
INDUSTRIAL	10	8	18
SERVICES	3	2	5
TOTAL	13	10	

Table 5. Breakdown of wave three sample by gender and economic area

	MALE	FEMALE	TOTAL
INDUSTRIAL	6	5	11
SERVICES	3	2	5
TOTAL	9	7	

The overrepresentation of industrial specialisms reflected the service offer of schools (including others in the state not sampled) and the local economic/labour profile. Only Torreón offered a non-industrial course option at the time of sampling (Accounting), from which seven students were selected (two were later removed due to sampling error). The remaining students were selected from five industrial specialisms to capture a diversity of industrial experiences: Electromechanics, Industrial Chemistry, Tools and Machines, Maintenance of Electronic Systems, and Mechatronics. Care was taken to ensure relatively equitable inclusion of female participants in the sample, despite their underrepresentation in industrial specialisms overall (López-Fogués et al., 2018).

Table 6. Location of participants - waves one to three

LOCATION	WAVE 1	WAVE 2	WAVE 3
SALTILLO	15	11	5
TORREÓN	13	12	11

As seen in Table 6 above, the vast majority of participant attrition occurred among participants from Saltillo. No definitive reason has been found to explain this. There is however a pattern to be noted: the majority of students that dropped out of the study were in the Tools and Machines or Electromechanics programmes – courses which were overrepresented in the Saltillo sample. Evidence from the first two interview waves suggests that these courses attracted a higher proportion of students from poorer backgrounds and/or with more intermediate-level career aspirations (although this is anecdotal based on interview material). While courses such as Mechatronics, Industrial Chemistry, or Accounting may offer more obvious pathways into higher education and senior professional employment, Machines and Tools and Electromechanics appear more likely to lead to intermediate-level jobs (e.g. repairing machinery on production lines). Thus, the underrepresentation of these students in the final sample might imply some exclusion of a particular social profile.[16] Torreón also experienced much higher rates of labour underutilisation

[16] Nonetheless, based on a review of the excluded interview data, only one excluded participant planned to directly enter the workforce, while all others expressed plans to combine work and study, as seen among retained participants (see chapter seven). Thus, participants' *carrera* did not seem to have a strong influence on plans for higher education entry.

through the pandemic period (26.8% compared to 13.1% in Saltillo; INEGI, 2021b: 1), which might result in more participants sitting out of the labour market and therefore being available for interview (although employment rates at wave two were no higher among the Saltillo sample than among Torreón participants). The geographical imbalance seen at wave three led me to consider including the data of those participants who continued to wave two, but did not complete wave three. However, as outlined in preceding sections, the original contribution of this thesis lies in the journey it takes with participants over an extended period of time and through a number of 'vital conjunctures'. Furthermore, participation in the third wave marks an important opportunity for active consent from interviewees (McDowell, 2001; Neale, 2013) – having participated in the *Dual Apprenticeship* project, they have the possibility to opt out of my independent study in its entirety by not completing wave three. Thus, in the interests of promoting a clear focus on shared temporality and medium-term trajectories, I decided to only include the interview data of the 16 participants retained until the third wave. The implications of potential exclusion are thus further discussed in chapter ten. In sum, the final data set for analysis comprises 48 interviews with 16 participants (see Table 5 for further information about their profiles).

5.3.4. Ethical considerations

Ethical approval for this research was provided by the University of Glasgow School of Education Ethics Committee, approval for waves one and two being awarded to the *Dual Apprenticeship* project in February 2020 and approval for my independent study, including wave three interviewing, being awarded in September 2021.

At the time of recruitment to wave one, all participants were over 16 and the majority were under 18. While parental consent was not sought, all interviewees were provided with a plain language statement and privacy notice well in advance of their first interview, which they were encouraged to share and discuss with their families. In the first interview, a verbal consent statement was read aloud and participants gave or withdrew their consent at this point. In waves two and three, participants received a written consent form in advance of each interview, which was approved digitally. They were also provided with the digital support they needed to download and use Zoom software (Newman et al., 2021). Participants were repeatedly informed about the possibility of leaving the study, and removing their data from the analysis, at any time. No interviewee expressly asked to leave the study and have their data removed, nonetheless, in the interests of ensuring rigorous and well-expressed consent (McDowell, 2001; Neale, 2013), the interviews with students that did not continue until the third wave have been excluded.

Technological necessities posed some ethical challenges (Newman et al., 2021; Roberts et al., 2021). Firstly, the primary (and most effective) mode of contact between participants and myself was WhatsApp. This had the potential to produce issues of intrusion for both parties (Newman et al., 2021). To reduce this risk, I established a dedicated Mexican WhatsApp Business account that was used solely for this purpose to protect the personal information of each group. Upon completion of the research project, this account will be deactivated and the message data and SIM destroyed/deleted. Participants will be reminded of my email address, in case they wish to contact me in the future. Secondly, the use of Zoom created some dilemmas about privacy and space in interviewing. On the one hand, Zoom interviews are significantly less demanding; I was able to work around participants' personal schedules and participants did not need to travel (Roberts et al., 2021). On the other hand, Zoom brought interviews into the private spaces of both parties, most often taking place in our respective bedrooms and, in my case, late at night due to the UK-Mexico time difference. In some ways, the usual ethical concerns about an interviewer and interviewee being alone in a private space together (McDowell, 2001) were bypassed, as we were not *physically* sharing space. Nonetheless, there was undoubtedly a more intimate facet of the interview process when compared to wave one, which took place in schools. Families and pets would provide interruptions, personal décor could be seen on both ends, and clothing choices were probably different than if the interviews had taken place in a face-to-face setting (Newman et al., 2021; Roberts et al., 2021). While safeguarding measures and codes of professionalism were followed, I also did not attempt to fully erase this informality – seeing it as an opportunity to create a more equitable and comfortable environment for participants (Roberts et al., 2021). For example, a university-branded background might have been the most professional choice on paper (hiding personal surroundings and minimising distractions), but it would also have reasserted my professional status in a way that might have been intimidating, off-putting, or impersonal to interviewees – who, it bears adding, were being asked to share extensive detail of their own lives. I found that, by the end of the study, participants were very relaxed and open with me, ready and willing to share their personal reflections and interior lives, and I feel some of these choices to preserve (respectful) informality contributed to this.

Indeed, these judgements formed part of a tendency towards a 'situated and processual' ethical approach over 'contractual' ethics (Neale et al., 2012:10). In the context of QLR, the unavoidable influence and underestimated benefits of *temporal change* on the research process and environment can render rigid and universal approaches defunct, and, potentially, actively unethical (Neale, 2013; Neale et al., 2012). Instead, as relationships, knowledge, and surrounding conditions evolve, 'sensitive appraisal of local circumstances and sensibilities' (Neale et al., 2012:10) can be used to support ethical longitudinal research practice.

5.3.5. Interview methods: waves one and two

Wave one and two interviews were semi-structured (Adams, 2015) and lasted between 25 and 70 minutes, the majority of wave one interviews lasting 45-55 minutes, and wave two interviews lasting 30-40 minutes. Following the GCRF project's research questions, wave one interviews covered the following themes (see Appendix 1 for full interview schedule):

a) apprentices' motivations for participating in the programme;
b) decision-making processes;
c) experiences of training, schooling, and peer-relationships, including data-gathering about the format of the programme;
d) professional expectations, aspirations, and personal life plans;
e) assessment of the programme and recommendations for future changes.

Wave two interviews covered the following themes (see Appendix 2 for full interview schedule), additional questions about Covid-19 being added after onset of the pandemic (Roberts et al., 2021):

a) current employment and educational experience/circumstances;
b) professional expectations and future life plans;
c) relationship between MMFD participation and current circumstances/future plans;
d) retrospective view of MMFD training experience;
e) impacts of the Covid-19 pandemic.

In the interests of comparability, it was ensured that all questions in the interview schedule were asked or addressed in every interview, although interviewers often asked additional follow-up questions and participants were free to extend their answers and touch on other themes (Adams, 2015; Grinyer and Thomas, 2012). All interviews apart from two wave one interviews were conducted by two interviewers: myself and a male Mexican colleague from the *Dual Apprenticeship* project. This combination reflected both practical requirements and a deliberate attempt to bring contrasting identities into the interviewing space and encourage exploration of different perspectives and experiences (e.g. male-female, Mexican-non-Mexican, native speaker-non-native speaker) (Caretta, 2015; Neale, 2013). In the two exceptional cases, time restraints required us to complete two interviews simultaneously and, therefore, individually.

The majority of wave one interviews were conducted in person in a private room within the CONALEP campus that the student attended. While it might have been ideal to conduct interviews

in a more neutral setting (McDowell, 2001), this was the most practical solution both for us as researchers, but also for participants who were travelling to a familiar place within reasonable distance of their homes (particularly important for the families of many participants, especially young women) (Herzog, 2012). During the first wave of data collection, which took place from February to April 2020, the Covid-19 pandemic arrived in North America. As a result, a few days before concluding our interviews, all public schools in Mexico were closed with less than 24 hours' notice. Two interviews were scheduled to take place on campus the following day, and three more a few days later. The first two participants were offered the option to complete their interview in socially-distanced conditions, on the open-air terrace of our hotel. These two participants accepted and the interviews were completed at the scheduled times. After further consideration of the risks and responsibilities involved, the decision was made to suspend interviewing in person (Newman et al., 2021; Roberts et al., 2021). The final three interviews were conducted via Zoom some weeks later once I had returned to the UK. In all cases, participants completed the interviews from their homes, usually in a private bedroom. Due to continuing pandemic restrictions, wave two interviews (completed October to December 2020) were all conducted via Zoom, with the same two interviewers working from private spaces in their homes.

Prior to each interview, participants were provided with a plain language statement about the research and a privacy notice. For wave one, a verbal consent statement was read aloud by a researcher at the start of the interview to which participants responded. For wave two this was changed to a written consent form that participants received and signed digitally in advance of the interview (Newman et al., 2021). All in-person interviews were audio-recorded and all Zoom interviews were audio- and video-recorded, with permission from participants. Interviewees were nonetheless welcome to keep their cameras switched off, and this was often necessary for connectivity reasons (Roberts et al., 2021). Wave one interviews were transcribed from the audio recordings by a native speaker transcriber, wave two interviews were transcribed by my fellow interviewer. To preserve anonymity, only I retained access to the video-recordings in order to review the transcriptions and add notes on non-verbal communication where relevant.

In recognition of participants' use of time and sharing of expertise with the GCRF project, those that completed a second interview received an Amazon voucher for 750 MXN (approx. £30, equivalent to one day's wages in an intermediate industrial job or one third of the monthly stipend for MMFD students). This was intended as more than a token gesture (McDowell, 2001), instead providing genuine material value to students and their families, particularly in the economic context of the Covid-19 pandemic (Newman et al., 2021), and contributing to the generation of a relationship of reciprocity and respect (Neale, 2013). Amazon vouchers were chosen because of the wide variety

of products available on the platform, including clothing, household goods, and food. While, from a social justice standpoint, indirect financing of a deeply unethical enterprise that consciously accelerates the degradation of labour rights and drives unsustainable consumption would not have been my first choice for remunerating participants, University guidelines preventing direct cash transfers combined with the complexities of working internationally meant that this offered the most flexible and accessible benefit to participants while being bureaucratically permissible.

5.3.6. Interview methods: wave three

While earlier interviews captured trainees' experiences immediately before and after graduation, the third wave was conducted from October 2021 to February 2022 – more than a year after graduation and after a vaccine had been developed and many pandemic restrictions lifted. The interviews were conducted via Zoom and followed the same semi-structured format as the previous two waves, but questioning was generally more detailed. This wave was even more keenly focused on gathering rich experiential data about the process of transitioning from upper secondary TVET into adulthood (Grinyer and Thomas, 2012). Young people, understood as efficacious policy analysts in their own right, were invited to appraise the MMFD based on their experience and reflect on their trajectories to date and their plans for the future. As a result, interviews lasted between 40 and 100 minutes. In recognition of participants' extended time contribution to the final round of interviews for this doctoral research, a further 750 MXN Amazon voucher was offered to each participant (Newman et al., 2021). In this wave, there was a particular focus on how the personal contextual conditions of each apprentice (personal background, prior educational experiences, Covid impacts, family life, health, gender etc.) shaped their post-MMFD transition. All questions were carefully worded and selected to respond to and enrich data from the earlier rounds, while remaining sufficiently open to allow participants to express their own points of view (Adams, 2015; Grinyer and Thomas, 2012). The interviews covered the following themes (see Appendix 3 for full interview schedule):

a) Daily life: present and future (including use of time/money questions);
b) Retrospective view of MMFD participation;
c) Impacts of Covid-19: past, present, and future;
d) The influence of personal background/identity;
e) Reflections on transitions.

Prior to the interview, participants were provided with a plain language statement, which explained the study and outlined the structure of the interview (see Appendix 4), and a written consent form for digital signature (see Appendix 5).

One further significant change to the third wave was the addition of use of time/money questions. These were intended to capture a rough picture of participants' daily routines, priorities, and commitments. Research has already demonstrated the relationship between use of time and gender (Mattingly and Sayer, 2006; Hilbrecht et al., 2008) and social class (Lareau, 2000; Roy et al., 2004): given the focus in this doctoral research on inequalities of these kinds, use of time questions seemed a particularly suitable means of exploring this in greater depth (Grinyer and Thomas, 2012). In addition, one question about *future* uses of time was used to explore the classed and gendered imaginaries that young people had about their future selves; while they might be living one material reality currently, participants might (or might not) aspire to or envisage a change in daily circumstances indicative of the nuances of self-creation and social mobility that are particularly poignant at the cusp of independent adulthood (Neale and Flowerdew, 2003; Neale et al., 2012). Another important thread of enquiry was explicit questioning about the concept and experience of 'transitions'. Rather than overlaying the concept of transition onto participants' responses to broader questions, I wanted to know if they felt 'in transition' and what transition meant to them (Neale and Flowerdew, 2003). This also deepened the exploration of young people's agency in building on the first two waves (Schoon and Heckhausen, 2019). In order to better understand how young people judge the balance between structure and agency in their own life courses (Neale and Flowerdew, 2003; Rudd and Evans, 1998), questions were added that probed how in control of their trajectories young people felt and based on what reasoning or perception of their social environment.

5.3.7. Data analysis

Before describing the coding process, I will first outline the journey that the data took from utterance by participants to textual object of analysis (Clark et al., 2017). As previously described, interviews were audio- and sometimes video-recorded. Rough, unstructured notes were also kept during the course of interviews. After the conclusion of each wave of GCRF interviewing (waves 1 and 2 only), I wrote an English language summary of every interview based on interview notes and audio recordings. This acted as a form of content-based pre-coding for my independent research (notes were organised thematically according to research questions) (Lewis, 2007a) and allowed non-Spanish-speaking members of the *Dual Apprenticeship* team to contribute to our tentative analysis (although not formally to that of this thesis) (Clark et al., 2017). The summary pro-forma

also captured reflections on the interview process and nascent analysis, which informed the design of and approach to later waves (Grinyer and Thomas, 2012). These summaries were reviewed in advance of each successive wave of interviewing. In recognition of the non-native limitations of my Spanish, interviews were transcribed by Mexican native-speakers to minimise opportunities for alteration of the data or misunderstanding. These were produced gradually over the course of the two-year data collection period. Once all waves of interviewing and transcription were complete, I thoroughly checked all transcriptions against audio and video recordings, correcting for verbatim fidelity, applying standardised conventions for depicting 'talking data' (Widodo, 2014), redacting personal data, and making additional notes about non-verbal communication (e.g. where tone, facial expressions, or gestures were not reflected in textual renditions). Transcripts were kept in Spanish for analysis to preserve the cultural specificity and significance of many concepts and language forms and to reduce the influence of translation processes on analytical conclusions. While these processes do not eradicate the complexities of conducting cross-language research, they constituted a robust and practicable system of contending with data fidelity and study reliability (Clark et al., 2017; Gent, 2014).

The 48 interview transcripts were first analysed from a reflexive thematic analytical standpoint (Braun and Clarke, 2019; 2022); that is to say, my epistemological/ontological orientation (see section 5.2.1), and, thus, my chosen analytical framework informed how I organised and interpreted my data into a series of themes, sub-themes, and codes. 'Stories' of interest to me as I coded (Braun and Clarke, 2019; 2022) related to how different Grammars of Youth intervened in young people's lives, the strategies (youth pragmatics) they adopted in navigating a transition pathway, the evolution and interaction of policy features with these variables, and young people's (developing) interpretations of the MMFD's impact on their lives. As such, my approach to coding was primarily latent – interested in the concepts and assumptions that sit behind the 'on-the-page' data – but nonetheless maintained a semantic interest in participants' reporting of their experiences and opinions (Braun and Clarke, 2022).

The formal coding phase commenced once all waves of interviewing and transcription had been completed. This meant I had already spent substantial time with the data in enacted, audio, visual, and written forms by the time coding began. On the basis of this data knowledge, an evolving set of research questions, and my continued exploration of the Grammars of Youth framework (Braun and Clarke, 2019; Braun et al., 2022), three broad themes were in play from the start of the coding process: namely, subjective, temporal, and locational grammars (see chapter six for further discussion). The analytical dualism of the adopted analytical framework and my critical realist sensibilities led to the treatment of grammars (or structure) as occupying a distinct stratum that

could be thematically explored in its own right (Archer, 1995). My ideas about youth pragmatics – the strategies that young people employed in their transition construction – were not yet sufficiently formulated to be given a thematic home at this point. I envisioned MMFD policy features as occupying a space between the two; oscillating between the policy's engagement with the broader structural environment and its interrelationship with young people's individual and collective transition efforts. A number of tentative codes – related and unrelated to the three themes, some being inductively generated during data familiarisation processes – were also drawn up as a starting point for coding. Coding was thus conducted in an iteratively inductive-deductive fashion (Braun and Clarke, 2022).

Given the reflexive orientation of my approach to research, coding was conducted manually and repeatedly using NVivo 12 software (i.e. not employing the software's Autocode feature), and extensive use was made of the annotation and memo functions (Braun and Clarke, 2019; Seale and Rivas, 2012). Annotations were used to record contemporaneous reflections on individual snippets of data, and memos were used to record tentative synthetic analysis and connections between different sub-themes and cases. Cases were classified according to the following properties: gender, location, sector, *carrera*, highest parental education, degree of parental financial support, and semester of entry to dual training. Several contrasting test cases were the first to be coded, in order to rapidly expand code diversity and comprehensiveness. The process recursively moved through generating, refining, reviewing, renaming, and regrouping codes and themes over two rounds of reviewing the full dataset (Braun and Clarke, 2022). Although the possibility was left for new 'grammar' themes to be generated, the initial list of three remained unchanged by the conclusion of the analytical process.

As part of thematic analysis, data were analysed cross-sectionally at each time point to compare participants' divergent experiences and self-representations (including segregated by case property), longitudinally to trace each participant's changing trajectory over time, and cross-sectionally *and* longitudinally to detect collective change over time (Lewis, 2007a; Neale and Flowerdew, 2003). These three axes of contrast helped in the construction of latent, explanatory analysis. This was further supported by the creation of a 'plan-activity' Excel database (Lewis, 2007a), which treated interview data in a more semantic fashion, mapping participants' actual work and education status at each wave and their plans for the near future expressed at each interview. Additional qualitative details were also recorded such as reasons for change/continuity, salaries if in employment, relevant non-work or education activities, and changes in personal circumstances (i.e. building a picture of both 'time' and 'texture' as discussed by Neale and Flowerdew, 2003). This allowed for the evolution of participants' planned and realised trajectories to be traced over time

on a case-by-case basis, to be compared across cases at each ‘vital conjuncture’, and to be segregated by gender, *carrera*, economic sector, and education/work status for inter-group comparison (Lewis, 2007a).

The final themes and codes from NVivo, all memos and annotations, and the plan-activity database formed the basis of the findings presented in the proceeding chapters. The findings are presented in relation to the ‘grammars’ themes and sub-themes and most often organised to demonstrate chronological (though not necessarily linear) temporal evolution. Thematic observations related to youth pragmatics and policy features are interwoven throughout. Very brief comparative case studies are sometimes used when presenting the findings to demonstrate contrasting experiences of similar moments, processes, or contexts (Lewis, 2007a; Neale et al., 2012)

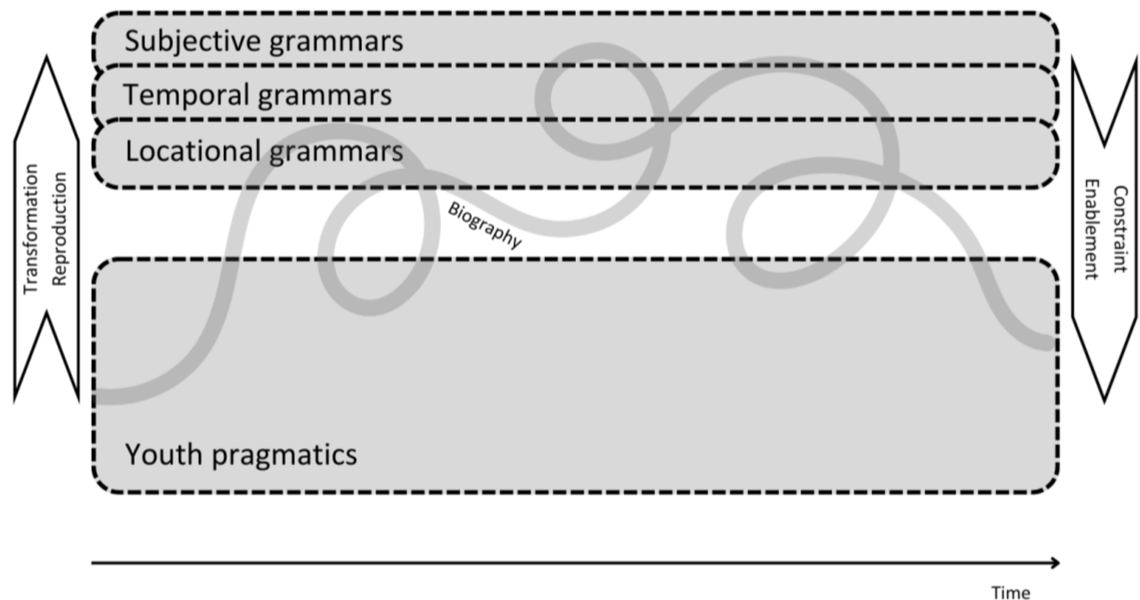
6. Signpost to findings

As discussed in section 5.3.7, the Grammars of Youth framework was extended and refined in the course of this doctoral research using the concepts of subjective, temporal, and locational grammars. In this brief preamble, I will discuss the value and intention of this analytical development and explain the organisation of findings chapters.

The concepts of temporal and geographic situatedness are central to the design of the Grammars of Youth framework (see section 4.3.2). Drawing on the social generation approach within youth studies (Furlong et al., 2011; Woodman and Leccardi, 2015), temporal situatedness emphasises the relevance of cohort effects on youth experience and directs attention to how the meaning and nature of youth have evolved over time (Bendit and Miranda, 2017; Miranda and Alfredo, 2022). Geographic situatedness draws attention to the global diversity of youth experiences, and consciously responds to a historic paucity and undervaluation of research knowledge about youth transitions in LMIC contexts (Batan et al., 2020; Miranda and Alfredo, 2022). In addition, the Grammars of Youth framework is highly attentive to how social identity mediates young people's transitions and biographical development (Bendit and Miranda, 2017). In essence, the framework encourages three axes for consideration when researching youth transitions: i) *who you are* as a young person; ii) *when* you are young; and iii) *where* you are young. These are what I term subjective, temporal, and locational grammars respectively (see Figure 4).

These categories and terms are not explicitly developed by Miranda and colleagues, but I believe they are latent in the analysis they present. Furthermore, in my own data interpretation, these three themes were central and recurrent; first developed out of the data familiarisation phase, then reinforced through the formal coding process. The grammars that I found to be pertinent in participants' lives all related to one of these three categories. Equally, the tripartite framework was a useful means of directing attention to particular facets of young people's training and transition experiences, such that the framework and data interpretations were iteratively and recursively developed (Braun and Clarke, 2019; 2022). Of course, the three 'categories' are not entirely discreet and distinct. Subjective experiences are mediated by location, temporal cohorts can result from social shifts, locational factors evolve over time, and so forth. Indeed, the overlapping and interconnected nature of different grammars is repeatedly referred to and reflected on in the proceeding chapters. Nonetheless, I argue that the subjective/temporal/locational typology is a useful way of clarifying this tripartite concern already contained within the Grammars of Youth framework, and – as an analytical innovation – it is a pertinent means of directing attention to these

three core facets of youth transition processes, encouraging productive, critical research questions in this field.



Source: Author's own elaboration from (Archer, 1995; Miranda and Alfredo, 2022; Miranda and Corica, 2018)

Figure 4. Grammars of Youth framework including subjective/temporal/locational typology

The three findings chapters are intentionally organised in the following order: subjective grammars; temporal grammars; and locational grammars. This reflects a decreasing capacity for inter-group comparison using the research data, and a simultaneously increasing contextual scope. In relation to subjective grammars, I am able to make comparisons *within* the sample of individuals to glean insights into how different subjective grammars (in this case, gender and social class) intervene in youth transition processes. I also maintain a tight contextual focus in considering how young people who share the same time and location vary in their subjective experiences of transition. This results in comparatively detailed insights and theorisation and, as a result, by far the longest of the three chapters. In relation to temporal grammars, the longitudinal research design supports intra-cohort comparison between different moments in time, which helps in exploring the effects of temporally significant events (in this case, the global Covid-19 pandemic) on youth transitions. The contextual scope is also expanded to consider how the experiences of diverse young people who share the same location might differ through generational time (Neale et al., 2012) – although the single cohort research design necessarily places limitations on this. Finally, in relation to locational grammars, I consider how the shared geographic context of this diverse youth cohort might be impacting their training and transition experiences. Given the single research site (urban Coahuila), the comparative possibilities in this analysis are limited. However, this chapter extends its contextual considerations the furthest of the three, examining how the socio-spatial nature of this youth

cohort's experiences are mediated by Coahuila and Mexico's place within regional, national, and global political economy structures, which are necessarily products of particular moments in historic time (Neale et al., 2012). As such, each of the three chapters offers its own distinct balance of specific detail, comparative scope, and contextual scope; which taken together offer a rich and far-reaching portrait of youth transition impacts connected to the MMFD.

As a final note; in the following chapters, I quote extensively from interview data. To ease legibility, I refer to interviewees using their pseudonyms and indicating the wave of interviewing (i.e., W1, W2, W3). Indicating the interview wave is intended to highlight the temporal context of participants' statements in relation to their educational transitions and personal life stories. Where this is of particular note, it is emphasised in the discussion, but it is valuable to maintain attention to this while considering the presented data. Furthermore, it will often be relevant to contextualise participants' comments based on their gender, location, and *carrera*. Therefore, Table 7 below offers these details for each interviewee and can be referred to when reading chapters seven to nine.

Table 7. Summary of participants' gender, location, and carrera

Pseudonym	**Gender**	**Location**	***Carrera***
Roberto	Male	Saltillo	Electromechanics
Atziri	Female	Saltillo	Mechatronics
Alma	Female	Saltillo	Mechatronics
Rafael	Male	Saltillo	Mechatronics
Javier	Male	Saltillo	Machines and Tools
Claudia	Female	Torreón	Accounting
Adriana	Female	Torreón	Accounting
Marco	Male	Torreón	Accounting
Armando	Male	Torreón	Accounting
David	Male	Torreón	Accounting
Blanca	Female	Torreón	Maintenance of Electronic Systems
Rosa	Female	Torreón	Maintenance of Electronic Systems
Carlos	Male	Torreón	Maintenance of Electronic Systems
Raúl	Male	Torreón	Maintenance of Electronic Systems
Erika	Female	Torreón	Industrial Chemistry
Enrique	Male	Torreón	Industrial Chemistry

7. Findings: subjective grammars

7.1. Introduction

In this chapter, I explore the Grammars of Youth that contribute to inter-cohort difference between young people that share the same temporal and locational context. That is to say, the relevance of who young people are as social individuals for generating inequalities of access, experience, and outcome related to the Modelo Mexicano de Formación Dual (MMFD). These grammars are universal in that all social beings claim and/or are assigned to a particular place in their architecture (with resultant effects on their social and material lives) but are also *subjective* in that a person's relationship to a given grammar is particular to their individual identity.

A useful example of a subjective grammar is gender. All of us live in a social world where gender constantly mediates our work, relationships, clothing, consumption, movement, finances, and so on, and yet the meaning and impacts of gender for our lives vary individually. These can stem from our, and other people's, perceptions of our gender and our beliefs about the broader meaning of gender. Within this sea of subjective experiences, powerful patterns of collectivity are also evident: based on the gendered norms and material structures of a given society, broad categories of persons occupy similar, and hierarchised, positions of power, resource, social inclusion, and personal freedom. As such, one's experience of the grammar of gender is deeply subjective, but facets of this subjectivity are shared with others and reflect the gendered organisation of society.

Subjective grammars are acutely relevant to the experience of youth transition. As a singularly intense period of identity formation, youth is a time when we learn a huge amount about the expectations, opportunities, and constraints offered to us by the subjective grammars around us. We – willingly and unwillingly, wittingly and unwittingly – amass fragments of these grammars to produce our personal lexicon of who we are and who we can be. Such grammars operate right across the fabric of social life, but education provides a central forum for their transmission across generations. In these spaces, the interaction between subjective grammars and educational interventions mediates the experiences and outcomes of diverse student populations. As such, examining how subjective grammars function within educational spaces can help identify what role education policies can play in generating and counteracting social inequalities.

In this chapter, I explore the two subjective grammars that were interpretated from the data as being highly relevant in the lives of the 16 interviewees and influential for their MMFD transitions:

namely, gender and social class.[17] Subjective grammars are necessarily simultaneous and intersectional in their effects, and so I address gender and social class concurrently in my analysis. Following a brief situating discussion, the chapter is organised according to three phases of educational transition – access, participation, outcomes – demonstrating the distinct mechanisms by which these grammars operate at different moments and their cumulative contribution to inter-cohort inequalities. I also identify policy features of the MMFD that appear to mitigate or exacerbate the generation of such inequalities. In doing so, I hope to highlight means and points of intervention to ensure that dual training in Mexico is fair and fruitful for all young people.

7.2. Subjective grammars and participants' identities

Before continuing, I will briefly situate the meanings of gender and social class employed in this chapter. As part of the research registration process, participants were invited to describe their gender, and all described themselves as women or men. No questions were posed about sex assigned at birth or sexuality, and no disclosures of this nature were made. As such, the subjective grammar of gender is discussed throughout this chapter through the contrasting experiences of men and women. This is not intended to imply a binary understanding of gender, but reflects the experiences recounted by participants.

In considering social class, it should be highlighted that all participants come from broadly similar, and relatively speaking, lower class backgrounds (López-Fogués et al., 2018). In Mexico, the Office of the Federal Prosecutor for the Consumer (Profeco) describes the following six social classes:

> **Low-Low:** It is estimated that this [group] represents 35% of the population, and is made up of temporary and immigrant workers, informal merchants, the unemployed, and people who live on social assistance.
> **Low-High:** Estimated to be approximately 25% of the national population and made up mainly of workers and peasants (farmers). [This group] is the physical force of society, performing hard work in exchange for an income slightly above the minimum wage.
> **Middle-Low:** Made up of office workers, technicians, supervisors and qualified craftsmen. Their income is not very substantial but is stable, it is estimated that this is 20% of the national population.
> **Middle-High:** Includes the majority of businessmen [sic] and professionals who have succeeded and who generally have a good and stable income. It is estimated to be approximately 14% of the national population.
> **High-Low:** Made up of families that have been rich for only a few generations. Their financial income is large and very stable. Estimated to be approximately 5% of the national population.

[17] Despite the importance of race, indigeneity, and skin tone for understanding social inequality in Mexico (as discussed in section 3.4), this was not interpreted as a theme of relevance in the data analysis. This should be interpreted as an absence of evidence rather than evidence of absence, and the origins and implications of this are discussed further in section 10.3.1.

> **High-High**: Made up of old rich families who have been prominent for several generations and whose fortune is so old that it has been forgotten when and how they obtained it. Estimated to be approximately 1% of the national population.
> (SEGOB, 2014: unpaginated)[18]

Based on participants' descriptions of parental background and household finances, the majority could be described as belonging to the low-high class, with a larger minority being middle-low and a smaller minority being low-low. Exact profiling of individuals is neither necessary nor desirable, especially considering the substantial limitations of these categories and the fragility of class positions (Expansión, 2021; Torche and Lopez-Calva, 2013). Nonetheless, the Profeco schema offers a broad picture of how class might be understood in Mexican society, and roughly where these young people are situated within that (Howell, 2018).

Throughout this chapter, when discussing the challenges faced by low class and low-income study participants, this is not based on a strict definition of household income and is not presumed to be static over time. Of interest are the challenges that young people face in their youth transitions as a result of their personal and familial socio-economic status. Indeed, the concepts of family and household are very important to class in this study. At wave one, all participants lived with a parent/s. In later waves, some students moved to live with other family members, but none were living independently. This is reflective of social norms in the region and wider Mexico, particularly for low-income families. This also meant that household economic fortunes were decisive for the plans, options, and obligations of participants. Therefore, small variations in resources among participants related to important inequalities in the realisation of purported MMFD benefits, and pointed to the potential for even greater disparity among the diverse dual trainees found across Mexico.

7.3. Subjective grammars and accessing the MMFD

7.3.1. Pathways to application

Given the MMFD's placement within the Mexican education system (see section 1.3), several pathway decisions were required for young people to arrive at the point of applying to the MMFD. At the time of the research, only two sub-systems offered MMFD programmes in Coahuila: CONALEP (where the study was conducted); and the Colegio de Estudios Científicos y Tecnológicos del Estado de Coahuila (CECyTEC). Therefore, the process by which students selected CONALEP as their sub-

[18] Unless otherwise stated, all translations from Spanish to English are my own.

system of choice was pivotal to their MMFD participation. Furthermore, the MMFD was not available in all programmes of study, and so students' decision to select and maintain a particular *carrera* was also fundamental to MMFD access.[19] In interviews, several students made evident how gender and social class had mediated their choice to attend CONALEP and pursue their given *carrera*.

Firstly, in choosing to attend CONALEP, the geographical proximity of the campus was pivotal to the majority of students' decision making (Pantea, 2020). Several students did not apply to other programmes or sub-systems, despite the risks of non-acceptance, as the 'close' option was the only conceivable one. Indeed, for Raúl (W1), financial and transport constraints rendered geographically distant schools unimaginable and non-existent: *As it's the only one that's close to me, well it's the only school…there was*. This points to how the educational opportunity structures available to lower class students are constrained by their geographical situation within the unequal spatial distribution of urban resources (Garnica-Monroy and Alvanides, 2019). Indeed, for Rosa (W2), the infeasibility of long-distance travel was decisive in her choice between two disparate *carreras* – a choice which she would come to reverse in a later stage of her transition: *I've always been between two carreras, between Electronics and Veterinary […] [but] the transport [to Veterinary school] would have been really difficult for me, so, I…chose to join CONALEP in Electronics.*

Thus, it is possible to see how young people's lack of resources pushed them *towards* dual training and narrowed the available educational pathways based on material access. Furthermore, research in Mexico City has suggested that even where transport investments improve educational commuting times and open up access to 'elite' educational alternatives, changes in school choice and demand are limited to higher class students (Dustan and Ngo, 2018). This echoes broader literature suggesting that school choice processes are strongly influenced by class-based beliefs and expectations about educational options, in combination with material constraints (Boone and Van Houtte, 2013; Farias, 2014; Ortega Hesles, 2015).

Indeed, social class as more than simply a material push factor was reflected in the way that social capital, in the form of family members' professional experiences and backgrounds, shaped students' choice of sub-system and/or carrera. Indeed, occupational inheritance (Devine, 2010; Egerton, 1997) appeared to be strong among participants. Every interviewee had some existing family connection to their specific training specialism, to CONALEP, and/or to their target industry for

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[19] The term *carrera* translates literally as career, but in practical terms is used as an equivalent to specialism/programme of study in English. The term also contains a more long-term perspective on future career or occupation, which has no equivalent in English. Therefore, the Spanish *carrera* is used throughout this thesis.

employment. No student had made a radical departure from the expectations of their family in choosing their upper secondary education, and many cited the advice and experience of their relatives as a motivating factor:

> *Since I was in secondary, I expected to get in here [CONALEP], I have family members who studied here, and they talked to me about the school.*
>
> (Roberto W1)

> *I have […] a cousin who served as an example to me in the Accounting carrera and who I know that…from the moment I entered here, I was going to receive, well, help from her […] whatever doubts I have, I ask her.*
>
> (Marco W1)

Young people drew on the occupational knowledge and experience of their family members in a process of pragmatically-rational decision-making (Hodkinson and Sparkes, 1997; see also Breen and Goldthorpe, 1997). The 'partial information located in the familiar' (Hodkinson and Sparkes, 1997: 33) that young people could access through the capital and class habitus offered by their family was a hugely useful resource, but one that also produced a resistance to occupational mobility; choices outside of the family occupational history have been characterised as containing the risk of downward mobility for lower class young people (Breen and Goldthorpe, 1997) and, thus, requiring lower risk aversion (Wang, 2020). Indeed, a pragmatic of familial continuity appears as a logical response to risky and unknown pathways. For example, in addition to her earlier comments about how financial resources had constrained her choice of *carrera*, Rosa (W1) highlighted the importance of family history in her decision-making:

> *When I entered CONALEP, I had…two options […] follow the path that my dad and my brother took, or, well, go for another preparatoria*[20] *for Veterinary […] [but] because of…the familiarity that I had, I mean, as my brother had already studied there, well…I already knew, more or less, how it was…the system at CONALEP.*

This occupational inheritance as expressed through educational choices contains powerful potential for the inter-generational reproduction of class positions (Bourdieu and Passeron, 1990; Devine, 2010). Indeed, occupational immobility has been cited as 'a principal mechanism ensuring that the working class reproduces itself across generations' (Jonsson et al., 2011: 165-6; see also Egerton, 1997). However, it should be noted that the outcomes of this tendency towards occupational inheritance are not determined. Indeed, while most participants' occupational aspirations centred on the same industries and specialisms as family members, they were aiming for upward mobility in terms of qualifications, salary, and managerial responsibilities. Some outlier cases even planned

[20] *Preparatoria/Prepa*: upper secondary school.

to use this occupationally conformist route as a means to a more non-conformist end point.[21] Thus, students' aspirations contained the potential for upward mobility in 'big-class' terms (Jonsson et al., 2011) while exploiting the low-risk profile of a pragmatic of familial continuity. However, whether a vocational pathway is capable fulfilling the upward aspirations it generates has been questioned (Atkins, 2010; Lara Carmona, 2006), and such mobility has been found to be mediated by gender in Mexico and elsewhere (Devine, 2010; Torche, 2015).

Interestingly, in Rosa's decision-making, the influence of her family's class background appears to override gendered expectations that might see her discouraged from entering the same industrial *carrera* as her brother and father. This supports findings from Canada that having a father with a trade background can increase young women's likelihood of participating in male-dominated apprenticeship specialisms (Frank and Frenette, 2019). In contrast, there were other examples of gender dynamics exerting an important influence on young people's pathways towards dual training. Atziri described having no choice in attending CONALEP: *my parents, they decided that I would come to this school. I mean, let's say I'm here out of obligation* (W1). This left Atziri to pick her *carrera* (and thus future career) based on the four options available at the school, none related to her prior education. By wave three, Atziri disclosed that domestic violence and patriarchal control were a significant feature of her homelife, which had substantially impacted her educational pathway. By contrast, Armando (W1) was able to assert his preferences:

> *The truth is I've always been fixed in my decisions. Even my parents said, 'look for another', I mean, another opportunity, another school to apply to, but the truth is that I said 'no, I'm sure I can get in there and that I'm going to get in there'.*

Thus, gendered power relations within the family influenced some students' pathways to MMFD entry. As Blasco (2009: 42) highlights, in the micropolitics of educational decision-making in Mexico, 'households do not always behave as consensual, altruistic units [...] individual members may have differential resources, preferences, interests, and power by virtue of gender, generation, and educational level'. Furthermore, female students pursuing (traditionally male-dominated) industrial *carreras* described fighting against social expectations, reflected through their peers and teachers, that discouraged them from pursuing a norm-defying pathway:

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[21] See section 6.5.3. for discussion of these 'outlier' students' success in pursuing non-conformist aspirations.

I'm the kind of person to say 'ah, you think I can't do it? Well, I can' […] In fact, that's how I finished secondary, because the guys who were bothering me, they wanted me to drop out, 'ah you want me to leave? Then I'll stay'.

(Blanca W3)

I had a teacher who judged us a lot because we were studying Mechatronics. She always told us […] that we would never achieve anything for the simple fact that this carrera is for men […] She tried to limit us, she tried to put up a barrier, but I'm happy because I tried to overcome that barrier, I mean, I didn't let her comments affect me.

(Atziri W3)

The importance of these students' resilience and resistance was evident, pointing to the possibility of diversion away from the MMFD route and, later, drop-out among young women less able to take a defiant stance. Indeed, research has demonstrated the important role that resilience plays in helping women to maintain their participation in male-dominated technical education and employment (Bridges et al., 2020; Lester, 2010). Without sampling a broader spectrum of upper secondary students (i.e., not only those who were successful in entering the programme), this doctoral research project cannot fully capture the exclusionary effects of gender biases or how decisive the youth pragmatic of gender-based resilience is for continuity (see section 10.5 for further discussion of study limitations). However, low STEM participation among women in Mexico has been attributed to such biases (Orendain, 2019) and these experiences signal the additional risks and barriers that women face in accessing the point of dual training entry in industrial *carreras*; barriers which are not, research suggests, equally prevalent for men pursuing female-dominated specialisms (Curran and Tarabini, 2022).

Interestingly, none of the young women recounted gender-based resistance to their study plans from within their own families. Indeed, several female industrial students cited time spent learning with their fathers as the source of their vocational interest. Family support has been identified as a pivotal factor in women's pursuit of nontraditional vocational specialisms (Galeshi, 2013). This was perhaps an important influence on these young women who resisted other forms of gender-based adversity, pointing to the family as an important means of intervention for disrupting gendered educational norms (Orendain, 2019) and supporting a pragmatic of resilience.

Despite her many discouraging experiences, Blanca (W1) also recounted the importance of an educational intervention that framed an industrial *carrera* as valid and achievable for women:

When I was in sixth grade [11-12 years old], I read a…story that talked about Mechatronics. I still remember the story, it was called the 'Robotics Club' […] It was about a girl who was interested in it [Mechatronics], she was in a group of all men. And for me, it was when I started to investigate [the carrera].

This reinforces findings that exposure to counter-stereotypical role models in childhood, including through educational materials such as pictures and storybooks, can change stereotypical beliefs about gender and employment and encourage nontraditional career trajectories among women (Nhundu, 2007). Thus, the use of gender-conscious careers information from an early age could serve an important function in disrupting the gendered pressures faced by female trainees in industrial sectors, noting that repeated and long-term exposure has been found to be the most effective (Olsson and Martiny, 2018).

Having entered CONALEP and a given *carrera*, young people's access to the MMFD also depended on their decision to leave behind the traditional school-based route. As previously discussed, students' social class produced several push factors towards MMFD participation. Firstly, the offer of a 2,000 MXN (c190 USD using purchasing power parity [OECD, 2023]) monthly dual scholarship was a notable attraction for many students. For those from households with very low incomes, this money could be used to cover fees for CONALEP, replace income currently provided by additional employment, or be saved for higher education:

I was working and studying [before dual]. I was in the school-based modality and it was really demanding because I ended up really tired. And if I went to dual, well, I was going to study and they were going to pay me to study, to learn.

(Atziri W1)

[It was useful] to already have something with which to sustain myself […] it's already a separate livelihood if I want to continue studying, to already pay for my studies.

(Javier W1)

I'm doing it [dual] out of economic necessity [….] many of my classmates have very…complicated situations […] we want to contribute something to the household, because we know our parents, well, yes, they can give us an education, but they battle to do so.

(Erika W1)

In addition to the extra income from the scholarship, students could sometimes reduce their outgoings through dual participation, as firms assumed the transport, food, and equipment costs of their education:

There was also an economic [motivation] because, well for example when I used to get myself from my house to there [CONALEP campus], I had to pay for transport, then to get myself home

> *again, and then to work. And well, instead, now the company provides me with transport and food.*
>
> (Atziri W1)

A further way in which financial precarity pushed students towards dual training was the MMFD's promise of job security upon graduation. For these low-income students, integration into the formal working or middle classes via stable and formalised employment was a prevalent, but uncertain, aspiration. Dual training was seen as a reliable route into these 'good jobs', and out of intermittent crisis:

> *My family finances haven't always been good, so I always had in mind how to find a good job […] having lived like that, the impact was to make me want to grow professionally, I want to have a good job, help myself, help my family.*
>
> (Adriana W3)

> *The rumours said that all the students who graduated from here [from dual] […] they all left with a job. And they said they weren't having to struggle […] [if I joined dual] I was going to leave with a job.*
>
> (Atziri W1)

Drawing on Bourdieusian theory to explore how class-based dispositions generate attraction to apprenticeships in Austria, Altreiter (2021: 10, emphasis added) identifies working-class young people's interest in the adult world of work and wage labour 'both as an economic and *moral* necessity which sets the frame for what is financially feasible but also what kind of decisions are valued amongst friends and family'. In other words, as reflected in the above statements, while there is a compelling financial facet of speeding up entry into paid employment, there is also a moral component ('goodness') to attaining a 'good job', which responds to lower-class valorisation of the ability to provide for oneself and one's family from a young age, reinforced by a context of minimal social welfare (Pantea, 2020).

As already highlighted, there are limits to what this dataset can say about reaching the point of MMFD application. It would be interesting to interview students who never considered applying, or who ultimately decided not to apply, to better gauge the ways in which the subjective grammars of gender and class mediated that process. Nonetheless, interview data from successful applicants demonstrates that many facets of these two grammars push certain students towards the point of application and produce barriers to equitable access for others. Social class appears to be an important push factor towards MMFD application, based on the social capital offered by family professional background, the geographic proximity of CONALEP campuses to poor neighbourhoods, the economic draw of an additional scholarship, and the promise of a 'good job' upon graduation.

Conversely, for young women in industrial *carreras*, gendered employment norms provide an additional obstacle to MMFD application. As interviewees were the young women who 'made it' into dual training, they had had to demonstrate and develop a pragmatic of resilience and resistance. Their experiences suggest that other young women may have been dissuaded or diverted from applying to the MMFD. Industrial students who were female and poor faced an internal struggle between the push and pull factors of these intersecting grammars. In these cases, interviewees would highlight the challenges of facing down gender expectations, but economic necessity would prevail in pushing them towards an MMFD application.

7.3.2. Firms' selection of students

Once students apply to the MMFD, they undergo a selection process. The first round is conducted by schools and is primarily based on prior academic performance. Despite steady progress in some regards, there is evidence demonstrating the continuing relevance of gender and social class for educational attainment in Mexico (Araya, 2012; Paat, 2014; Solís, 2012), and associated equity implications of selecting students on this basis. However, the influence of subjective grammars on this stage of the selection process was not well captured in the data: none of the study participants struggled to meet academic entry requirements and, without the contrasting experiences of unsuccessful applicants, analytical insights about the mediating role of class and gender are limited. A second round of selection is led by firms, who interview students to assess their suitability for placement and sometimes conduct an exam assessing subject knowledge. Interview data suggest that gender was an important factor in this process.

Several women students in industrial *carreras* reported first or second-hand knowledge of gender discrimination in selection practices. Erika (W1) reported that finding placements in Industrial Chemistry was already challenging, but this was exacerbated by her gender: *[CONALEP tutor] told me that…it was also very difficult to secure a firm because I'm a woman, and because well, [the sector] is all men*. She explained that this was predicated on a perception that such dangerous and physically demanding work was incompatible with students' femininity:

> *They told me 'It's dangerous, you have to lose all vanity, all glamour. You have to forget that you're a girl, girl, girl. You have to know that you're going to work and that, well, it's boots, it's helmet, zero make-up, zero nothing'.*

The notion of masculine 'work' is constructed in opposition to the frivolity of female 'vanity' and 'glamour'. Indeed, to be accepted into this masculine environment, Erika needed to demonstrate a total abandonment of her 'girl' self, becoming a genderless worker embodied through their boots,

helmet, and make-up free face. This echoes Smith's (2013: 866) descriptions of how female workers' feminine corporeality, such as hair or manicured nails, were 'not supposed to be there' in male-dominated workplaces. Indeed, the increased visibility of the feminine body in the industrial work environment has been identified as an important component of gender exclusion (Bridges et al., 2020).

While Erika was asked to shed her womanhood as the price of entry, Rosa (W1) was turned away entirely from her first company interview:

> *First, I went to another firm […] it seemed strange to me because all the workers there were men […] when I was doing the interview and I said I was in Electronics, well the girl from HR was totally surprised […] she told me that…that I wasn't what they were looking for because it was heavy work, and it seemed like I was better with small things.*

The concept of 'heavy work/*trabajo pesado*' was a frequent euphemism employed to signal the inherent physicality, and, thus, masculinity, of work in the industrial sector. As Pérez (2008: 185, author's translation) describes, this reflects a binary stereotype of work based on 'the [masculine] virility associated with work that is heavy, painful, dirty, unhealthy, sometimes dangerous, which requires courage and determination; femininity being associated with work that is light, easy, clean, and requires patience and thoroughness'. Indeed, young men of different sizes and strengths were interviewed for the study, but never mentioned their physical capacity being assessed or questioned in the selection process. As Rosa (W1) makes clear, she understood how this coded language was intended, and it provided a lasting first experience of the sector: *As it was…my first interview…it didn't get me down as such, but yes it was like…not very nice*. Fortunately, Rosa wasn't discouraged by this experience, and she was offered a second interview, which resulted in her placement.

This reveals the potential effects of early exposure to the discriminatory norms and practices of the workplace for young women's transitions. While education ostensibly provides a protective and encouraging environment (notwithstanding damaging gender biases among teachers), the world of work is not required to operate under the same values of inclusion and contains multiple barriers to women's progression (Kelly et al., 2015). Lamamra (2017: 381) has suggested that dual training in fact plays an important role in gender socialisation, as 'the antechamber of the labour market' where gender-based work norms are learned and the sexual division of labour is reinforced. The role of the MMFD in moving students from one learning site to the other, and thus increasing their exposure to gender discrimination, did not appear to be considered in policy design, and young women were largely left to face these incidents alone.[22] Indeed, Kelly et al. (2015) highlight how the

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[22] See section 6.5.1. for discussion of the role of peer support in navigating gender discrimination.

adoption of 'gender-neutral' apprenticeship policies and practices support the perpetuation of inequalities. Even prior to entry, beginning with discriminatory selection processes, the MMFD appears to normatively and materially reinforce gender-based occupational segregation (Campbell et al., 2011; Fuller et al., 2005).

Unlike Erika and Rosa, Atziri (W1) did not face selection discrimination directly, but did hear about it from peers. When asked if she had heard of women students struggling to find placements, she replied*: to get into the factory, into the firm? Yes […] there were bad comments about women*. Demonstrating the conflicting ways in which narratives about gender can be both absorbed and resisted, Atziri further commented:

> *It depends on the person, as I said, on attitude. For example, if they told me that I won't be able to do something because I'm a woman, I mean, I'm going to demonstrate the opposite, that yes, I can do it, because we all have the same capacity.*

With this statement, Atziri simultaneously rejects the hierarchisation of capacity between men and women and evokes a distinction between women with different 'attitudes'. The implication is that women facing selection discrimination should fight to prove their equal worth, and that those who found themselves excluded likely lacked the necessary disposition. This overlooks how discrimination at the selection phase removes women's very opportunity to prove themselves. More importantly, it demonstrates how, subtly, the responsibility for discriminatory practices can be individualised and any impetus for collective action dissipated (Cech, 2013). Seron and colleagues (2018: 134) describe how the 'powerful imprint of individualism, gender essentialism, and belief in one's own exceptionalism' consistently blunts and undercuts female engineers' critiques of sexism in their industry. This pragmatic of individualism-exceptionalism shines through in Atziri's statement. Ironically, while selection discrimination persists, it *is* likely only the most persistent, resilient, exceptional young women who will make their way through the process. Indeed, some replication of typically 'masculine' attributes of being thick-skinned and unemotional becomes a necessity for continuation in the field (Miller, 2004; Smith, 2013).

In contrast to these female interviewees, all young men in industrial specialisms reported that selection processes were fair and open to all:

> *We all go through the same thing; the interview, we all go through the same and in the end, we are selected, they only had to introduce us to the companies, and that's how we were all selected.*
>
> (Roberto W1)

> *Yes, we all [have the same chance of selection], because we all have the same knowledge.*
>
> (Rafael W1)

While young women, even if they did not experience discrimination directly, had some knowledge of wider patterns of discrimination, this did not appear to be visible to their male peers, reflecting a phenomenon of hypocognition of disadvantage among privileged groups (Wu and Dunning, 2020). As a result, these students conceived of an even playing field in which, armed with the same resources and opportunities as their classmates, they had been successful in demonstrating particular aptitude or suitability to the firm. Through the (unconscious) adoption of a pragmatic of inequality hypocognition, young men were thus unaware, and unchallenging, of the ways in which, even before entering the programme, inequalities had begun to emerge within their cohort.

Experiences were somewhat different in the service sector, where a larger female workforce is typical. Women in service *carreras* did not report discrimination in dual selection practices and were confident that entry was fair, irrespective of gender:

> *Nothing was out of the ordinary. In the firm and in the school, everything was made easier for me […] I don't see any big difference between being a man or a woman, I think we all have the same opportunities.*
>
> (Claudia W1)

Nonetheless, one of their male classmates reported that his firm had explicitly requested male candidates: *They asked for men only [….] the [female] boss wanted all men […] before there was a girl in the firm […] and as it didn't go well, she didn't learn much […] I think this had an effect* (David W1).

The gender bias present in this hiring manager's decision-making, and the fact that this was transmitted to students without challenge from CONALEP, demonstrates the extent to which gender discrimination was a tolerated feature of dual selection processes. Indeed, schools appeared to be willing to work around firms' gendered preferences and overlook instances of gender-based exclusion. This brings into question the role of intermediaries (such as school tutors and chambers of commerce) in perpetuating, rather than challenging, industry-wide gender inequality regimes (Acker, 2009; Bamberry et al., 2022).

7.4. Subjective grammars and the MMFD experience

7.4.1. Learning in the workplace

One of the touted advantages of dVET over school-based routes is students' exposure to high quality learning opportunities in the firm (OECD, 2018). However, interview data suggest that learning experiences were not of equal quality for all students. Indeed, female students training in male-dominated industries encountered gendered barriers to learning progression.

Atziri described how her initial placement in an all-male team inhibited her learning opportunities. The workers were *very reluctant, very closed, they didn't give us much information* (W1). As a result, Atziri felt less able to resolve doubts about her learning and work: *I didn't feel free to ask questions […] because they were men, there wasn't much trust […] I can't acquire knowledge that I consider necessary* (W1). This echoes research highlighting women's barriers to building effective working relationships in male-dominated workplaces, where gender stereotypical subjects and social behaviours are relied upon to build rapport and belonging (Faulkner, 2009). After a few months, Atziri was transferred to a different team:

> *I was lucky enough to work with a woman […] she was the only woman in maintenance in the entire plant and well with her, I learned many things, she gave me the confidence to make mistakes […] all the knowledge that I acquired, well most of it was thanks to her [… I had the confidence to talk, to ask questions, to work well.*
>
> (Atziri W3)

This sense of trust and safety allowed Atziri to engage very differently with dual training, fully exploiting the benefits of workplace learning. Atziri's discomfort around her male colleagues is thrown into sharper relief by her wave three disclosure that she had lived through years of domestic violence committed by her father.[23] Coahuila has some of the highest rates of gender-based violence in Mexico, and young women and girls are the most affected: 80.8% of 16 to 24 year olds report having experienced gender-based violence in their lifetimes, and 64.3% in the last 12 months (INEGI, 2021a). If as many as 80% of all female MMFD students face similar circumstances to Atziri, then gendered power relations in the workplace become fundamental to ensuring equitable learning opportunities. However, the Mexican state has been consistently criticised for its role in perpetuating the high prevalence of gender-based and family violence by upholding the sanctity of

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[23] It was notable how fundamental longitudinal interviewing was to building the trusting relationship with Atziri that precipitated this disclosure (Grinyer and Thomas, 2012).

patriarchal familial and social structures (Alonso, 1995; Frías, 2010) and for its failure to consider the complex manifestations and ramifications of gender inequality (Malkin, 2021).

In contrast to the closed and reluctant attitude of co-workers described by Atziri, some of her male peers described how welcomed and included they felt upon arrival in their workplaces (Faulkner, 2009). This allowed them to freely ask questions, make mistakes, and learn from their colleagues:

> *They [colleagues] trust you as if you were a worker. For example, if a worker is doing a task, you can also do it […] if you're motivated to learn, then they'll help you with it. But they treat us all equally.*
>
> (Rafael W1)

> *When I say 'hey, boss, I have a question', even if sometimes he's really stressed, he has always taken the time to respond.*
>
> (Marco W1)

Gender also influenced the specific learning tasks that were on offer to students. Women in industrial *carreras* necessarily encountered physical tasks as part of their training. Some reported being prevented from completing tasks that were deemed too strenuous:

> *In the firm, I wanted to carry something, and it was like 'no, it's very heavy, leave it here'[…] There were things that I have to admit that yes, […] I can't carry them, but there were others that yes, I could carry, and they told me 'no, leave it there, it's very heavy'.*
>
> (Blanca W3)

> *In the case of my firm […] [one thing to address] would be, well, the inequality between men and women, I'm not unable to complete an activity just because I'm a woman.*
>
> (Atziri W2)

Erika (W1) described how she struggled to convince her colleagues that she was up to the task of working in a dangerous foundry environment. This transposed into an almost cavalier attitude towards her safety:

> *They told me 'it's dangerous […] it's boots, it's helmet, zero make-up, zero nothing'. Zero, I think tolerance for my…well-being. So, from then on, I was panicking that [inhales strongly], I mean, I was anxious that, something's going to happen to me, no? I'm going to burn myself.*

The burns that Erika did accumulate served as a trophy, demonstrating that she was capable of completing dangerous and 'masculine' work tasks: *I demonstrated that despite my burns, I'm still here. I burnt my foot, I burnt my hand, I burnt my finger…but nonetheless I got through it […] but people told me 'you're a woman, you can't do it'* (W1).

Thus, female students in male-dominated work environments sometimes had to assert their right to complete work tasks, or were removed from tasks altogether. Such tasks were part of the standard rotation plan for their *carrera*, and would be part of their future occupations. In the interests of 'protecting' female students from physical harm, they were deprived of core learning experiences. Notably, the example of Erika demonstrates how this might be counterproductive for student safety, as female students come to see tolerating physical harm as a means to prove their worth.

Taken together, these experiences suggest that gender stereotypes about 'men's' and 'women's' work strongly influence workplace supervisors' treatment of dual trainees, with resultant negative effects for women's learning experiences and well-being (Kelly et al., 2015; Lamamra, 2017). Indeed, apprenticeships are fundamentally enmeshed in the gendered 'inequality regimes' (Acker, 2009) of workplaces. The current gender-blind approach to preparing employers and students for dual training leaves this unchallenged.

7.4.2. Workplace treatment

The benefits of work-based learning are further dependent on colleagues' and supervisors' treatment of students, which interview data suggest varied based on gender. For young women in industrial *carreras*, their placement options were almost universally found in export-oriented *maquiladoras*.[24] These organisations and workplaces have a long-standing history of gender inequalities that link to broader gendered processes of global political and industrial change (Barlean, 2018; Salzinger, 2003; Taylor, 2010). Rosa and Atziri described navigating sexual harassment in such factories, which impacted their working relationships and training:

> *I saw how the maintenance technicians looked at some of the girls […] I could call it a type of harassment […] they can be very friendly and everything, but when you're not watching, well who knows, right? And this is what caused a lot of [internal] conflict for me.*
>
> (Rosa W2)

> *There were some men […] they had no shame, they were very rude. So I felt super uncomfortable working with them because sometimes they made comments that I didn't like or they gave me morbid looks […] and well, the work was pure movement, I was walking on top of the machines, I was climbing […] it was like all the men had their eyes on you […] it was very, very uncomfortable.*
>
> (Atziri W3)

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[24] *Maquila* or *maquiladora* refers to export-oriented factories that benefit from reduced or removed duties and tariffs and assemble or manufacture products for global markets at reduced cost.

Sexual harassment has been characterised as a mechanism of control and compliance, which is used to exclude and constrain women who threaten the historic construction of masculinity in male-dominated industries (Denissen, 2010; Smith, 2013). As both young women describe, their sense of certainty and confidence at work, whether in terms of physical comportment or internal psychology, was fundamentally disrupted by this treatment. Indeed, it is not hard to imagine how the reticence and behavioural change this produces might be used as further evidence of women's unsuitability for the industrial workplace.

In both cases, these experiences were only disclosed in later waves of interviewing. At the time of their training (in wave one), they were not yet able or willing to discuss their colleagues' behaviour in this light, and indeed insisted that they would be confident reporting cases of harassment should they occur. This reflects research findings that in contexts where harassment behaviours are quotidian and normalised, both aggressors and victims are less likely to name it as such (Bridges et al., 2020; Firestone and Harris, 2003). This is perhaps particularly true of 'lower order' forms of harassment such as teasing, name calling, suggestive looks, and sexual gestures, which are subject to claims of subjectivity and can be hard to challenge (Watts, 2007). It further highlights the value of longitudinal interviewing for building rapport and generating new research insights (Grinyer and Thomas, 2012).

Women placed in male-dominated workplaces also reported broader differences in how employees related to male and female students: *some people say like, they treat us less well because we're women* (Alma W1). For Rosa (W1), this was stark given her experiences of harassment, as she recounted the ease of her course mates' homosocial interactions with employees (Faulkner, 2009): *As I mentioned, I don't find it easy to relate to the technicians, but…I see classmates who do, they're [male] apprentices, they're [male] dual students, and they get along like equals*. It also presented significant problems for Erika (W1) when she was rapidly promoted. Her male colleagues were highly resistant to her new seniority, and found the combination of her youth and gender incompatible with a management position (Acker, 2009):

> *I wanted to leave dual, and I wanted to say 'enough' because... […] [colleagues would say] 'How is a 17-year-old girl, 16 at the time, going to boss me around? How is a girl going to become a manager?' […] as a woman it's very difficult to maintain that kind of position […] there's a lot of patriarchy, it's where there are more men, because it's a foundry, they're hard jobs […] I'm the only woman, and well, it's very difficult.*

Poignantly, in this quote Erika consistently describes herself as a 'woman', while her colleagues' perception is that of a 'girl': age itself becomes gendered, mobilised to invoke ideas of incapacity,

frivolity, and immaturity (Macarthur, 2015). Although the promotion was certainly premature and in contravention of dual training agreements (see chapter nine for further discussion), Erika was pursuing what she saw as a development opportunity, including additional payment. As a result, she became subject to enhanced scrutiny from her male colleagues, echoing a cross-section of research on women's experiences in skilled trades (Bridges et al., 2020). The failure of MMFD actors to manage the consequences of gender relations within the workplace negatively impacted Erika's learning experience, professional development, and personal well-being, and endangered her continued participation.

In this case, Erika (W1) had already been moved from a different firm because of rumours about her romantic life. A fellow apprentice in the firm had suggested that she was in a relationship with her much older supervisor and the rumours had spread across the workplace:

> *Human resources spoke to me, and it was enough for the entire company to find out about that piece of gossip […] the owner spoke to me and told me […] 'if they want to believe it, they're going to believe it. So, I have to go and tell your tutor, tell CONALEP what's happening'.*

Erika (W1) was suspended from her placement for a week and, eventually, she decided to leave the firm because of the untenable environment:

> *I demonstrated with facts that I didn't do it, but it wasn't enough, the gossip continued […] it wasn't the same anymore […] [I developed] migraines, I no longer felt comfortable […] if I went to the bathroom the engineer had to accompany me […] so I said 'this is not daycare, I'm leaving'.*

Expectations about women's sexual behaviour and identity meant that, even as the vulnerable and underage party in this rumoured relationship, Erika was the one subject to condemnation, new surveillance procedures, and, ultimately, a significant disruption to her learning programme (Bridges et al., 2020). Her case provides further evidence of the devastating and highly disruptive consequences of slut-shaming in the workplace (Hess, 2016), although the relevance of this issue for apprentices has perhaps not been fully appreciated. Erika's instance that *I'm not that type of person, who's looking for gossip* (W1), exemplifies the weight of expectation that young women carry to behave 'correctly' and avoid shameful judgements of impropriety. These experiences reflect the continuing social importance given to religiously-informed values of virginity, fidelity, and monogamy in Mexican society, especially for (young) women and among lower social classes (Ariza and De Oliveira, 2005; Ruiz and Díaz-Loving, 2012; Tuckman, 2012). Such values inevitably permeate the workplace and contribute to prescriptive stereotypes about women's ideal behaviour as employees and community members (Heilman and Caleo, 2018). Blanca's (W1) experience further highlighted how young women can be subject to a double standard of sexualisation-infantilisation:

> *I really remember the first technicians I worked with, it was like 'no, of course you don't have a boyfriend […] you don't drink' and all that, but with a guy it would be like 'how's the girlfriend', I mean, we're the same age! […] I was very aware of that difference, it was like […] 'you're too little for those things'.*
>
> (Blanca W3)

These collective experiences highlight a range of hostile and discriminatory practices within the work-based learning environments of female industrial students. Importantly, while the *maquiladora* sector as a whole has been framed as a feminised industry that explicitly seeks to exploit the supposed dexterity and docility of female workers (Barlean, 2018; Salzinger, 2003), these young women, by virtue of their *carreras*, were entering into the areas which demanded higher levels of technical skill/education and physical exertion (e.g. machine repair and maintenance), and which were, thus, consistently male-dominated sub-sections of plants and wider industry. In these masculine islands, there is perhaps even greater pressure on male workers to distinguish themselves and construct their masculinity in opposition to pejorative perceptions of feminised *maquiladora* labour. Thus, tolerance for danger, physical strength, and technical know-how are constructed as exclusively masculine attributes that set these forms of labouring apart from other *maquiladora* work (e.g. on assembly lines). Such a distinction is threatened by the arrival and professional success of female apprentices. The highlighting of students' sexual and gender difference, whether in the form of harassment, slut-shaming, or infantilization, therefore becomes a way of reasserting masculine primacy and re-calibrating the gendered skill-set that defines the differential value of 'men's work' within feminised *maquiladoras* (Bamberry et al., 2022; Peña, 1991).

By contrast, women placed in the service sector and men across all sectors (both groups posing comparatively little threat to the existing gendered division of labour) gave generally positive accounts of treatment in the workplace:

> *I feel they treat us all equally […] I haven't had a problem with anyone […] I've always received good treatment.*
>
> (Adriana W1)

> *Since I started my placement in dual, up to now, there have been no complaints […] everything is very pleasant […] My bosses are always very attentive and supportive.*
>
> (Marco W3)

Again, for male students regardless of sector, the development of a pragmatic of inequality hypocognition meant that the issues faced by their female colleagues were not visible, and they repeatedly stressed the fair and equitable treatment given by firms: *In maintenance there are only*

six of us and there is only one woman and well...the...woman is treated the same […] [there's no] 'you are a woman, don't do this' and so on. We do everything [the same] (Raúl W1).

Nonetheless, this did not mean that all male students received the treatment and learning quality that they expected of their dual placement. In some cases, they felt underestimated or mistreated because of their 'apprentice' status: *In my company, there is a slightly bad view of us, […] because although we have more responsibilities, as we are not completely workers […] [and] there is a difference or a…a negative view they have of us* (Carlos W1). Although these cases raise important questions about the learning environment provided by firms (see chapter nine), there was no evidence that this treatment stemmed from students' individual social backgrounds or identities, and instead appeared to be the result of cultural issues within some companies and generalised problems of age-based discrimination (Sánchez-Soto and Bautista León, 2020).

7.4.3. Professional role models

A further important feature of the MMFD learning offer is access to relevant professional role models. The availability and effectiveness of this role-modelling mechanism appeared to vary with students' gender and the gender make-up of their sector.

For female students in the industrial sector, seeing the possibility of success and progression for women could be an important motivator. It helped them to imagine a future for themselves in a male-dominated sector (Bridges et al., 2020; González-Pérez et al., 2020):

> *In the area of maintenance, there was a girl, well, a [female] engineer […] and they often used [her] as an example […] they told us 'if she was able to, you should be able to' and all that, so we were even more excited about it […] it was one of my motivations.*
>
> (Atziri W2)

However, as commonly found in such workplaces (Kelly et al., 2015), accessing even one female role model was not guaranteed:

> *The majority of companies that have these kinds of [industrial work] areas […] are all men. I think the only women in my company are those in administration and the girls who entered through dual […] now there are more women who are trying, right? To get into this type of carrera […] [but] currently […] there isn't much diversity when it comes to engineers.*
>
> (Rosa W2)

As previously discussed, Atziri was the only woman in her team for the first three months of her training. Changing teams and working with the only female engineer in maintenance was transformative: *Believe me this was one of the best things that happened to me, with a woman I felt much more confident* (W3). However, Erika's account demonstrates how watching the experiences of female role models could also highlight the adversity faced by women:

> *My point of feminine learning […] she left the firm […] I learned a lot of good things from her, but I also learned machismo […] She shared excellent ideas, we shared very good ideas, but they didn't pay us any attention […] We'd pass [the ideas] to my other mentor, who is a man […] and he would present them, and they would listen to him. So…so this demotivated her […] [and] it was something very disappointing for me.*

This echoes research findings that exposure to female vanguards can actually reduce women's leadership self-concept and interest in male-dominated jobs as they witness backlash and thus seek to progress in more welcoming employment domains (Rudman and Phelan, 2010). In a further example, Atziri's (W3) account of drawing motivation from her colleague's example was shattered once she realised that her firm was only making job offers to male apprentices: *…it was one of my motivations and then it discouraged me when they said that this time, well, they only wanted men in the area*.

Indeed, this highlights the individualising tendency within the message of success offered through Atziri's 'role model' colleague: *'if she was able to, you should be able to'* (W2). Structural barriers to progression are erased in this individualistic model of possibility and reinforced Atziri's adoption of a pragmatic of gender-based resilience in pursuit of similar outcomes. In reality, it was the very same firm that proffered this role model which then blocked her entry to employment. The possibilities for tokenism and disingenuity within role modelling processes should therefore not be underestimated (Eriksson-Zetterquist, 2008).

By contrast, Claudia (W1) described the wide-ranging and positive role model experience she was able to gain through her training in the service sector:

> *It, like, opened up a way for a me to get to know lots of people, lots of mentalities, you're already in a company and they're always, like, helping you, with what to study, how to get ahead […] more than anything the examples of life that they give.*

Male students were similarly inspired by the role models they could access in the workplace, and based on whom they could imagine a future pathway for themselves:

> *[I would like to study] an Engineering degree, and if I can do more, a master's is what they say [to get] to be a manager, like the Maintenance Manager. […] We saw a Maintenance*

Manager's pay slip. Jeez! How surprised [we were] by what he earns […] what he does is takes the experience he already has, and he inculcates it in each of us.

(Roberto W1)

A study by Lockwood (2006) has suggested that while women particularly benefit from female role models, men are able to glean the same benefits from role models of any gender. Thus, women in the service sector, and men in any sector have plentiful opportunities to access relevant role models, while women in male-dominated sectors face greater barriers. Indeed, dual students' experiences validate this pattern, undermining equitable realisation of the benefits of the role-modelling mechanism.

Given the aforementioned importance of family professional backgrounds in guiding students towards an MMFD application, actual participation appeared to provide lower class students with access to professional role models and forms of social capital not available in the home. This particularly impacted higher education aspirations, with many students citing the example of university-educated colleagues as encouraging them to pursue further training:

I really like to see how a manager [works], to see what he does in a company […] I would like to [become a manger] […] to make all my studies worth it […] [I would like to do] an engineering degree, and if I can do more, a master's degree, so I can be […] like the Maintenance Manager.

(Roberto W1)

I think my [expectations] are higher [now], I mean, before I didn't have the expectation of travelling […] planning to finish my professional training in another country.

(Atziri W2)

They [older colleagues] said, in maybe two or three years, you'll say 'no I don't want to study' or something, but as you grow up […] you say 'how I would have liked to finish university, how I would have liked to have finished it to have a good salary, I mean, have a good life and not wear myself out so much at work'.

(Rafael W3)

Importantly, this was seen as a significant benefit by study participants, but runs counter to the policy aims of the MMFD. Local policymakers hoped that students would end their training at the upper secondary level and directly enter intermediate skill employment. However, exposure to highly educated colleagues in the workplace appeared to reinforce students' already existing sense that higher education would bring greater rewards in terms of professional status and salary, strengthening a pragmatic of prioritising HE over work. While this might be construed as a class levelling mechanism within MMFD programme design, converting these aspirations into the desired

higher education and employment outcomes was not necessarily straightforward for certain social groups, as discussed in section 7.5.

7.4.4. Additional work

The MMFD assumes that the dual learning timetable of applied and theoretical study is a student's primary professional focus. In Coahuila, this is supported by a dual scholarship, which rewards the workplace contribution and allows students to concentrate on their theoretical education. However, the extent to which this assumption was realised varied among students of different economic means.

For some students from low-income backgrounds, the 2,000 MXN per month scholarship was sufficient to allow them to give up additional employment and focus on their educational goals:

> *I was working and studying [before dual]. I was in the school-based modality and it was really demanding because I ended up really tired. And if I went to dual, well, I was going to study and they were going to pay me to study, to learn.*
>
> (Atziri W1)

Nonetheless, there were other students in more challenging circumstances, for whom the dual stipend was not sufficient. After the death of his mother, Roberto (W1) had become partially estranged from his father and assumed responsibility for his learning and daily living costs. The dual scholarship was not enough to cover these, so he engaged in additional work: *I also work in a pizzeria […] it's four hours a day […] I dedicate all my day to the firm and to work*. Although this allowed him to continue studying, it was not without its impacts on learning*: I have had difficulties, both economic difficulties and…family problems which have led me to, to fall behind*. Similarly, Blanca (W1) described how her additional work in a cybercafé made it difficult to complete theoretical homework tasks:

> *To help my family, I have a job on the side […] I'm always running around […] In the cybercafé, it's…I think about 35 hours a week […] from Monday to Friday I go from 4pm to 10pm and…I go on Sundays from 12pm to 7pm. So yes, it makes it a bit complicated to finish the tasks because I have to be in one place or another.*

Both students described intense time poverty as they juggled the demands of essentially full-time employment, 35 hours a week in the firm, on-campus lessons, and associated travel time. This left them with almost no time for non-work-related activities and placed significant pressure on their ability to make the most of the MMFD's programme of learning:

> *I was studying in the morning and I had to work at night. The truth is it would be really heavy, really heavy.*
>
> (Roberto W3)

> *Yeah it's a bit complicated because, for example, I finish [at the dual firm] at 2:30pm, I get home at like 3:30pm, more or less, and it's like I arrive, I eat, I change and I go to my other work because I start at 4pm.*
>
> (Blanca W1)

This echoes Kandel and Post's (2003) research into the time and learning pressures faced by low-income students in Mexico combining school with paid work. Significant lengthening of compulsory schooling (e.g. upper secondary education was made compulsory nationally in 2012, Roldán Vera and Robles Valle, 2020) has increased educational expectations on young people without alleviating the financial necessity of their economic participation. Kandel and Post (2003) suggest that policy-makers' implicit assumption that students' additional work will not harm their educational progress undermines the effectiveness of education reform efforts. As the cases of Roberto and Blanca demonstrate, the inclusion of such an assumption within MMFD policy design ignores the negative effects of paid work on educational outcomes. Even the 2,000 MXN scholarship was not always sufficient to prevent the poorest students seeking paid employment. As a consequence of the learning and time pressures this generates, low-income students' continuity in the programme comes under threat: *The reason lots of students dropped out of dual was because of the financial support, because it was very little in truth* (Atziri W2). Indeed, additional work has been identified as an important source of upper secondary drop-out across Mexico (Villa Lever, 2014), and more than 37% of CONALEP students report contemplating ending their studies due to financial pressures (SEP & CONALEP, 2019).

7.4.5. Participation costs

As is often the case for apprenticeships, participation in the MMFD usually resulted in increased costs for students compared to the school-based modality (Stanwick et al., 2021). Commuting to the workplace was more time-consuming and costly, families had to prepare separate lunches, and professional clothing and uniforms were required. Some individual firms provided free transport, food, and clothing, but this was not required by MMFD agreements. When these additional expenses were borne by students, the extent and impact of the costs were unevenly distributed according to gender and social class.

Comparing the cases of Erika and Enrique provides a striking example of how gender can impact participation costs. Both were studying the same specialism and were placed in the same firm,

which did not provide transportation. There was no public transport connecting Enrique's house to the firm, and he could not afford the 120 MXN return taxi trip. He therefore travelled by bike, which provided a quick and cheap solution. Erika lived further away, and her mother drove her to and from the firm every day. Public transport was a possible option, but high local rates of femicide and disappearance had made her family fearful. At the time of wave one interviews, 10 women and girls were being murdered every day in Mexico (Causa en Commún, 2020):

> *One of my cousins disappeared about four years ago. We never found her […] my parents are scared that something will happen to me. They won't [let me] take buses, so my mum drops me off and picks me up.*
>
> (Erika W1)

Erika paid for the petrol costs of the 50-minute daily round trip out of her dual scholarship. Neither cycling, nor public transport, were an option for her due to the threat of violence. As a result, the costs of participating in the same dual placement were substantially higher for a female trainee. Cases of gender-based violence on public transport networks are common and well documented in Coahuila and wider Mexico (Dunckel Graglia, 2016; Infante-Vargas and Boyer, 2022). However, rather than addressing these barriers for dual students and other young women, state government and police have been criticised for their handling and perpetuation of the violence (Infante-Vargas and Boyer, 2023).

Enrique (W1) nonetheless still had to bear many participation costs, the impacts of which were particularly onerous for him and his very low-income household:

> *It's fine [the scholarship], but there are some things that... […] I'm starting to take it as something bad, because […] my mother has to make food for me […] they also didn't give me boots, safety equipment, they didn't give me trousers, they didn't give me a shirt.*

Thus, the benefits of the dual scholarship dwindled as Enrique had to spend much of this money on direct participation costs.

For students from lower-income households, variability in firms' accommodation of participation costs and inconsistency in scholarship payments had a greater impact on their household finances and endangered their continuity in the programme. By contrast, for students whose family finances were more secure, these two variables did not pose such a concern:

> *In my case, my parents support me with everything. […] My parents support me with lunch, with everything I use. It [the scholarship] is something extra, like, for me.*
>
> (Rafael W1)

> *[A delay] wouldn't affect me because well…my parents, my parents help me and everything.*
> (Raúl W1)

Given the already precarious financial position that lower-class apprentices often face (Montacute, 2020), the erosion of the limited economic benefits of training participation highlighted in these students' experiences poses significant risks to equitable and continued participation for dual students from low-income families.

7.5. Subjective grammars and MMFD outcomes

7.5.1. Entering the labour market

A fundamental policy aim of the MMFD is to improve the labour market entry of upper secondary graduates. Insecure and low-productivity employment among Mexico's youth remains a persistent challenge (Roldán Vera and Robles Valle, 2020). The MMFD is therefore intended to prevent fractured transitions, reduce youth unemployment, and guide young people into higher quality, intermediate-skill work. Interview data suggest ways in which the grammars of class and gender undermine the conversion of MMFD training into 'smooth' labour market entry.

As Rafael astutely identifies, an intended benefit of the MMFD is the enhancement of graduates' labour market bargaining power. Armed with quality work experience and detailed knowledge of industry, young people should be primed to navigate and negotiate on the labour market in pursuit of high-quality employment outcomes (Valiente and Scandurra, 2017):

> *[As a dual graduate] you already know...a worker's salary because […] [your colleagues] tell you, 'before coming here to [company name], I was in such and such company and I made this much money'. And well now […] you have an idea of a base salary that you could earn. […] you can approach the company […] and they can give you that salary.*
> (Rafael W1)

This pragmatic of labour market negotiation, however, relies on young people possessing some degree of financial security. Requesting higher pay and refusing inadequate employment relies upon the ability to absorb rejection (Hernández-Fernández et al., 2022). Low-income graduates must calculate their capacity for unemployment in days and immediate employment is imperative for them and their families. This often results in the acceptance of poorer employment outcomes. Indeed, as Auspurg and Gundert (2015: 113) argue, 'labor market inequalities are clearly shaped by social positions that reflect specific power imbalances between employers and employees'.

Roberto's school-to-work transition provides a powerful example. At wave one, Roberto was clear-eyed about his value and his desire for continued professional growth. When asked if he would accept a job offer from his dual firm, he replied:

> *If they give me the opportunity to grow […] in responsibilities, in everything, [if they] take my lead so to speak, of course! But if I see that […] I killed myself to keep studying and everything, just for them to give me the same post, I would look for something myself, in another company.* (Roberto W1)

However, by wave two, his ability to exercise a pragmatic of negotiation had not materialised. The dual firm did not offer him a job, so he had continued working in a pizzeria, as throughout his dual training. He applied to roles in the industrial sector, and received one offer, which he accepted. The assembly line operator role was neither relevant to his area of expertise, nor at the technician level that a CONALEP diploma confers. Roberto had no financial freedom to wait for a better offer, indeed, he was careful not to go a single day without work: *They hired me at [company name] on October 1st […] on the 30th [September] I stopped working at the pizzeria, I went and handed in my resignation and the next day I joined the company* (W2). He was told that after six months in the operator role, if he performed well, he might be transferred to a Maintenance Technician post. However, it was made quite clear that he possessed little bargaining power:

> *They told me that yes, I'd been accepted […] that I could leave it or take it, that I should wait six months, and then they would give me my opportunity [as a technician]. Most of all because I didn't get much work experience, as they were asking for a minimum of one year experience […] I only did dual for four months and that's what they told me, and I did decide to take it.*[25] (W2)

By wave three, the six months had passed in the firm, and Roberto had not moved position: *They didn't want to give me the category I was, I was really fighting for them to give me the category [of technician]. And…they didn't want to give it to me, I was fighting and, and they didn't want to.* His frustration exacerbated by polluted working conditions, Roberto found another operator post in a different factory, again joining the two posts seamlessly to avoid loss of income. He was again told that after six months in post, he might transfer to a technician job. At our final interview, he had been in post for five months, and was waiting to see if the promise would materialise.

[25] Standard MMFD placements last one to two years. Roberto joined the programme for the final year of his schooling, but work-based training was cut short by the global Covid-19 pandemic. This loss of work experience, among other pandemic-related factors, significantly impacted dual graduates' employment transitions. For further discussion, see chapter eight.

Throughout this labour market transition, Roberto's ability to leverage the value of his training was undercut by his need to not go a day without work. Other graduates similarly found themselves underemployed in work that was low-paid, low-quality, and unrelated to their training:

> *I'm working in a shop […] let's say it was the only option I had left […] and well, I decided to take it […] it's not related to what I'm studying.*
>
> (Atziri W2)

> *[My salary] is very low […] they told me that it's a trial period, and then I hope that having completed the trial period, well, they'll increase [my pay].*
>
> (Adriana W2)

In contrast to these graduates, other young people were able to rely on family resources to cushion their labour market entry and protect their status as qualified technicians (Hernández-Fernández et al., 2022). Like Roberto, Alma had insisted in wave one that she would only accept a job offer from her host firm if it was commensurate with her training: *if it was as a technician maybe, but as an operator no*. In later waves, she had chosen to stay out of the labour market, turning down work that did not fit around her studies and contribute to her professional development: *If there is the opportunity to work, then there it is, I have to take advantage of it, the opportunity, and if not, then something better will come later and…so I think that […] [both options] look the same* (W3). Similarly, Rafael, who had been so astute in recognising his own bargaining power in wave one, was in a position to exercise a pragmatic of negotiation in his later transition thanks to his parents' financial support:

> *[The host firm] called us and got us back to do an interview […] but they wanted to give us a lower salary than what I think we deserve as technicians, they were going to put us as operators […] but well it was a very low salary and so I decided to focus a bit more on university […] anyway, what I said to them was that we already have the experience they're asking for, because they themselves had us working as technicians, they had taught us the process […] So I think that, like, that didn't really convince me. […] My parents told me 'we will pay for your university'.*
>
> (Rafael W3)

Pursuing a pragmatic of negotiation further relied on a sense of confidence and self-belief; a process entangled in classed and gendered power-relations (Azmat and Petrongolo, 2014; Sauer et al., 2021). As Armando demonstrates, assuredly asserting your plans and interests to employers can bring significant professional payoff, but it first requires a belief that this is justified and an abundance of opportunities and resources that support risk-taking (Borlagdan, 2015):

When I started working there [in the dual firm], as I was already kind of on the payroll, several [job] offers came in. The truth is I didn't give my CV to any of them […] the important thing is that they came to me, they offered me [jobs] […] They had said to us in the [dual] company […] 'were we interested in staying on at the company?' I said yes and well, let's say it was something secure, that job, for that reason I didn't start looking for anything else, but I did get various offers […] I discussed it with the company, that I had received a pretty good offer […] and they matched the offer, and I stayed here.

(Armando W2)

Ironically, with the exception of Armando, exercising a pragmatic of negotiation usually resulted in graduates remaining unemployed, as roles commensurate with their training were hard to come by. Indeed, the experiences of both class groups suggest that the intermediate level technician jobs that policymakers hoped MMFD graduates would take up either did not exist in great number in the local labour market, or employers were not willing to fill them with dual graduates. The significant labour market impacts of the global Covid-19 pandemic for this cohort of students is further explored in chapter eight.

Smooth entry into the labour market was further undermined by gender discrimination in hiring practices among industrial sector firms. For most young women, this was not something that they predicted when asked in wave one about future obstacles to securing employment, despite a 13% gender gap in employment rates for CONALEP graduates in the region (SEP & CONALEP, 2019: 23). Alma (W1) was a rare exception:

It could be, like, in terms of work, perhaps, as they say, because of discrimination, for being a woman […] I have heard things, like that some people look down on you. Like, they make out like 'no, you're a woman, you don't know'.

Her response was prescient because shortly after graduating, Alma and Atziri (placed in the same firm), realised that the male students they had trained with had been offered employment in the firm. They, as female trainees, had not:

In the factory where I was, like four [male] classmates stayed working in the factory […] they only gave [job offers] to certain [male] classmates.

(Alma W2)

Now […] I'm working in a shop. I would have liked to carry on working in [name of dual host firm] but I wasn't given the opportunity, they only…took men into account.

(Atziri W2)

It was only because both students were based in the same firm that they were able to spot a gendered pattern to hiring practices. Indeed, their mutual validation and support was fundamental to detecting, naming, and condemning (if only privately) the actions of their host firm:

> *My [female] classmates and I were talking, my other [female] classmate who you're also interviewing […] well she was saying that [the company] did already get in touch because they were contacting them [male classmates] and we [female students] hadn't received any call […] and that was when we realised that they didn't want to give an opportunity to any of the women.*
>
> (Atziri W2)

This highlights the potential benefits of building peer support networks among female apprentices in nontraditional sectors and minimising lone placements in all-male work environments, helping to prevent individualised erasure of systemic patterns of inequality and bolstering an existing pragmatic of resistance.

The experience of hiring discrimination evoked complex and contradictory reactions from both young women, who wrestled with socio-biological norms about women's capacities and their sense of disappointment and injustice:

> *I realised that women are not really taken into account […] as technicians in factories, like in the maintenance area and they [women] are not seen, like visualised, it's, it's all men. But I think there is a little sense in this, because, well, the majority of jobs are in repairs. I'm not saying that women, we don't know how to repair, but for example, some [jobs] do involve heavy lifting, so I think that we don't have, from that genetics [perspective], we don't have the same strength as men for this. […] But in other cases, I think that also, we should be equal with others.*
>
> (Alma W3)

> *We realised that they didn't want to give an opportunity to any of the women […] I suppose due to the fact that the area we were in was maintenance and there was only space in the machining area that, well, it's a position…where a lot of work is done that women can't do, but it is kind of a disappointment.*
>
> (Atziri W3)

Both quotes demonstrate how, despite belief in their own capabilities, Alma and Atziri had, to some extent, absorbed and come to accept the idea that some jobs were 'not for women' and were beyond their capacities (Seron et al., 2018). This is perhaps not surprising given the gendered messaging about work tasks that they received throughout their own training (see section 7.4.1). However, both young women battled to reconcile these inherited norms with the knowledge that they had already demonstrated proficiency in these very tasks:

> *The first area I was in was machining […] I was there for…six months, seven months […] that's exactly why I felt they were making an exception for women because I had already been in that area and they saw how I worked […] it seemed unfair to me.*
>
> (Atziri W3)

Rosa (W3) faced similar experiences of gender discrimination in her wider search for work in the industrial sector:

> *Most of the jobs I applied to…well the requirements, I was missing one, which was to be male […] I do see in those types of jobs, in maintenance, there is still a preference for men […] I went to an interview for an Engineer's Assistant, they didn't give me the job […] I imagine that they didn't give it to me […] based on profile.*

She echoed the sentiment expressed by Atziri and Alma that certain jobs or tasks were better suited to men, and that roles incorporating more feminised tasks, such as administration, might be more accessible to women:

> *I've noticed that anything that's more…physical, they ask more for men, and if it's something like…like a bit of engineering, a bit of administration […] there they have no problems if you're a man or a woman, but yeah when it's…when they know that it's going to be more physical than a woman, well, normally she'll be complaining […] [so] they ask for men.*
>
> (Rosa W3)

In fact, women who succeed in entering STEM careers in Mexico generally occupy less technical and less managerial positions, producing a gender pay gap within the sector (AP STEM, 2019). Torre (2019) has further highlighted the particular challenges faced by working-class women attempting to cross gender boundaries into high-skill blue-collar work and the limited impact of VET in this regard. This demonstrates how the inequality contained within the grammar of gender can be mutually co-constituted by a pragmatic of professional self-preservation, as young women recognise their surroundings and pursue careers in the sub-sectors more likely to offer advancement.

While, at the early stages of transition, explicit cases of gender discrimination were only reported by women in industrial *carreras*, Claudia (W3) highlighted gendered hiring practices in the service sector, with likely impacts on her future progression:

> *Here in Mexico, it is an issue […] they give men more opportunities in some carreras, when in reality it should be equal, right […] in certain jobs, certain positions, generally for a senior position…they always give it to men […] I think it could be the case that in the future, when I go to a large company […] they will have to choose someone and I think there is going to be some type of this difference, sooner or later.*

Indeed, while Claudia had been fortunate to be hired as an accounting assistant upon graduation, she had also accumulated new responsibilities, with no uplift in pay or title. By contrast, her course mate Armando was rapidly promoted less than a year after graduation: *Right now, I am already in*

charge of the purchasing area and I am working alongside a colleague, but I am no longer an [accounting] assistant (W3). This reflects patterns of vertical gender segregation in the labour market (Cooney, 2001; Fuller and Unwin, 2013) and broader inequality regimes that consistently hinder women's advancement on the basis of class and gender (Acker, 2009). Research suggests that apprenticeships have done little to disrupt this (Frank and Frenette, 2019; Fuller and Unwin, 2013).

Thus, realisation of the promised employment benefits of MMFD training were contingent on several classed and gendered factors. These were not accounted for in the design of placements or student support, leaving lower-class women particularly vulnerable to poor quality employment transitions.

7.5.2. Entering higher education

Unlike most apprenticeship systems, the MMFD provides permeability into higher education (HE). This results from reforms to the CONALEP sub-system in 1998, which ended its previous status as a terminal option (Villa Lever, 2010). Against a backdrop of rapid higher education expansion in Mexico (Gómez and Maldonado-Maldonado, 2019; Varela, 2006), an aspiration to complete an undergraduate degree was universal among the study participants. This is striking, given the comparatively low class positions and familial resources of graduates – two factors which have been linked to low propensity for HE aspirations in Mexico (Hernández García and Padilla González, 2019; Silas Casillas, 2012). The role of MMFD participation in reinforcing a pragmatic of prioritising HE over work among lower-class students (see section 7.4.3) may have contributed to this unexpectedly universal trend (Hernández-Fernández et al., 2021). The academic selection criteria used for MMFD entry also produced a cream-skimming mechanism, ensuring that the most academically confident and motivated students were admitted. Nonetheless, it should be noted that, when surveyed, roughly 75% of parents of CONALEP students in northern Mexico (all modalities) expressed a desire for their child to attend university (SEP & CONALEP, 2019: 19). This suggests that high educational aspirations are not limited to dual students at CONALEP.

Participants were equally universal in their intention to combine further study with part-time work, using supplementary income to cover study expenses and maintaining practical application of their technical skills in the world of work.

I also want to keep, like, studying and working so as not to lose, like…also the practice in work […] it's very distinct to only be studying, to see [only] theory, [compared] to already applying the activities every day in a company.

(Claudia W2)

However, despite uniformity in these plans and aspirations, the actual trajectories that MMFD graduates were able to realise ultimately splintered into three groups, differentiated along class lines and mediated by gender and sector: i) those that never entered HE; ii) those that combined work and study; and iii) those that were only studying, and had never entered the labour market.

Turning first to the group that never enrolled in higher education. In fact, Roberto was the only one of the 16 participants who never entered university, although he maintained an aspiration to do so. Each time we met, he would articulate a new version of his plans, which by wave three had become substantially less concrete and realisable:

I would like to keep studying and working if the [dual host] company gives me the chance. […] I'm thinking of asking them […] and if it's possible I'll happily do it […] working to pay for school like I've been doing up till now.

(W1)

Here in the company, we asked and yeah, they offer the opportunity to keep studying […] I've been thinking about it […] but I would need to first of all accommodate the, the economic [side of things] […] yeah, I'm going to achieve this dream, this goal, I do want to accomplish this.

(W2)

I want to keep studying, finish an engineering degree […] I really want it, I need it […] The truth is I really doubt at the moment […] that you'd be able to study [with the support of] the firm. I think it's very complicated in this sense. I would say it would at least be next year […] I would study in the morning and have to work at night. The truth is it would, it would be very heavy.

(W3)

As discussed in section 7.5.1, Roberto experienced a difficult and fractured post-dual transition. This was exacerbated by the degree of financial independence required after the death of his mother, estrangement from his father, and relocation to live with his older sister. In essence, his financial situation worsened his quality of employment, as he cycled through multiple operator roles with poor working conditions, which in turn prevented him from making his planned HE entry, as he had neither the time, flexibility, nor money required to do so:

It [HE entry] hasn't been very…very clear because…well, I've had some family problems and everything, I had to take care of myself alone. That's why I decided to look for a better job to

> *first of all be good economically myself, because I knew that I wasn't going to be able to cover much of my expenses, especially with university.*
>
> (W2)

As such, it was possible to see how Roberto was trapped by the material limits of class mobility within a pragmatic of economic survival. Without accessing HE, he would be unlikely to substantially alter his employment prospects and socio-economic position; although completing a degree would be no guarantee of this either (Flores-Crespo, 2007; Howell, 2018; Villa Lever, 2016). His fractured and poor quality working trajectory also carried heavy risks of scarring effects on career advancement and salary (ILO, 2022). Roberto was in fact the only participant who behaved as hoped by policymakers – directly entering the industrial labour market – but the promised employment returns were continually frustrated by his own economic circumstances and the unwillingness of firms to appoint him as a technician. Indeed, persistent issues of employment quality and discrimination against inexperienced workers have been acknowledged as substantial barriers to improving youth employment outcomes in Mexico (Sánchez-Soto and Bautista León, 2020). Roberto's example therefore highlights why higher education entry offered a far more attractive route to MMFD graduates, if their economic circumstances would allow.

A second group of lower-income graduates were able to engineer these economic circumstances by combining work and study (n=9), as is common among lower class entrants to higher education (Moreau and Leathwood, 2006). However, sectoral differences were evident in the nature and quality of that work and the associated pragmatics. For those in industrial *carreras*, combining work and study usually meant low-quality, often informal work unrelated to their prior education. Work of any kind was a necessity for HE participation, but industrial employers often did not provide any flexibility in working arrangements to facilitate this*: I'm working in a shop [...] let's say it was the only option that was left for me, to keep continuing with my studies* (Atziri W2). Thus, for industrial students, the goal of vocational development was subsumed within a pragmatic of HE-prioritisation, university being viewed as the more valuable pathway in a dichotomous choice between relevant work or further study. By contrast, four out of the five service sector graduates were able to secure work at the technician level or higher (three of these with their dual host firm), which could be adapted to their study timetables and was directly relevant to their ongoing professional development. As such, these four participants were able to simultaneously pursue a pragmatic of vocational prioritisation *and* HE-prioritisation, although participants emphasised that the former remained subordinate to the latter if circumstances were to change.

While combining work and study was highly appreciated by graduates for allowing them to participate in higher education, this route produced learning and time costs. Participants described

intense and significant time pressures from the combination of work, classes, and university assignments:

> *Sometimes when teachers give me a lot of homework […] I say well, either I study or I work, I can't do both […] sometimes I do think about doing one of the two, but I mean, I can't leave work because how do I pay for university? and I don't want to leave university because I won't have many job offers either.*
>
> (Adriana W3)

> *Since I started school [university, alongside work], ah, I can't say I've slept my eight hours [laughs] […] because really I haven't, I sleep, if anything…five hours, four hours.*
>
> (Erika W2)

Research has highlighted the continuity risks produced by engaging in significant amounts of employment while pursuing HE, and the resultant equity implications for low-income students (Bozick, 2007; Moreau and Leathwood, 2006). Study participants who engaged in less formal and less relevant work faced stronger associated learning costs as they struggled to engage fully with the HE learning programme:

> *[What] harms me the most, is the homework […] I try to do it during class hours or if they give the chance at work, I'll do it right there […] I leave [work] at midnight, I get home at half past twelve or one-o-clock and that's when I can start doing the homework […] there are times [...] when I can't take the classes…so I feel that I'm not acquiring the learning that really I hope to.*
>
> (Atziri W2)

> *I have seen a lot of cases of my classmates […] as they're working, they're struggling a lot to send in homework and, well, their grades go down, like…they want an average of eight or above […] to be able to pass.*
>
> (Raúl W2)

By contrast, although combining studies with relevant work in the service sector was also very demanding, their mutual reinforcement was beneficial for graduates' professional development:

> *They [my employer] have helped me a lot, I'd say with hours and also with questions, that come up in relation to my carrera […] more than anything in…the…professional aspect, well it's getting ahead, pushing myself in my work […] becoming more involved in accounting.*
>
> (Claudia W2)

Thus, combining work and study was a pathway that was generally pursued as an economic necessity by lower-income students as part of a pragmatic of HE-prioritisation, with resultant negative effects on personal well-being and learning (Moreau and Leathwood, 2006). The negative trade-offs of this pathway were far stronger for industrial sector students who struggled to find work

of sufficient relevance, quality, and flexibility to support their professional development. As a result, industrial graduates who had the means to do so generally remained outside of the labour market, despite previously expressing a desire to work part-time. By contrast, service sector students who combined work and study framed this choice as a symbiotic balance of HE- prioritisation and vocational prioritisation pragmatics, that, while economically necessary, also brought long term developmental benefits. The divergent equity effects of combining work and HE do not appear to have been well explored in a context of widening participation and persistent class inequalities in Mexican HE (Worthman et al., 2022). Based on these tentative findings, the issue seems to warrant further investigation.

Graduates who had not entered the labour market by the end of the study (n=5) were able to draw on material support from their parents and families (Hernández-Fernández et al., 2022). Indeed, some were actively discouraged from working to avoid the associated learning costs:

> *In truth no [I haven't been looking for work] […] not because I didn't want to [laugh], because they wouldn't let me […] my mum told me 'better to concentrate on your studies for the moment […] we don't feel so overwhelmed with costs […] university isn't so expensive […] you go to university for now and we'll see later that everything turns out well'.*
>
> (Javier W3)

> *My parents told me 'we are going to pay for your university while we can, and if a day comes, maybe far away, that hey, we couldn't or something', I have the opportunity to work.*
>
> (Rafael W3)

While a degree of familial economic stability is certainly a prerequisite for young people to pursue the HE-only pathway, both quotes point to the fragility of such financial circumstances. While a collective decision has been made to prioritise young people's continued education at that moment, such a pathway does not stem from a class background that positions HE as culturally and economically inevitable, and the choice may be overridden by a change in family fortunes. Indeed, this reflects the considerable vulnerability of the lower end of Mexico's ostensible middle-class to 'idiosyncratic and asymmetric shocks' that can trigger a fall into poverty (López-Calva and Ortiz-Juarez, 2014: 26; see also Scott et al., 2018).

Strikingly, only one graduate adopting a pragmatic of complete HE-prioritisation was female, and women were more likely than men to combine HE with work. While the findings from this sample cannot be relied upon to be representative, this might suggest that while women were free to pursue HE when covering their own costs, families were less prepared to redirect fragile family finances towards investments in women's continued education (Miranda Guerrero, 2007).

> *Studying is a priority and working would be…well, to pay for part of my studies, to pay for part of my materials […] well, in fact, what I'm saying is to help in my house […] so that they don't have to spend on the things I cost, right?*
>
> (Rosa W2)

In Peru, Guerrero and Rojas (2020) found that families shifted prioritisation of girls' access to higher education as their economic circumstances changed, leading to the protraction of girls' educational pathways as they attempted to navigate a pathway to HE without familial support. In the case of this study, potentially similar dynamics result in women graduates being disproportionately impacted by the time and learning costs of combining work and study. This is further combined with growing expectations to undertake domestic and care work (Romero, 2008; see section 7.5.4 for further discussion).

Regardless of whether they combined study with work or not, all of the women graduating from industrial *carreras* were successful in entering university. This is notable in a context where women's participation in tertiary STEM education is enduringly low (De Garay and del Valle-Díaz-Muñoz, 2012; Orendain, 2019): more than twice as many men as women were enrolled in an engineering, manufacturing, or construction degree in Coahuila in 2020, although there are signs of a slowly closing gap (Data-México, 2023). Nonetheless, two young women had left university by wave three, with gender and class playing an important role in the development of their trajectories (see section 7.5.3 for further discussion).

Collectively, these findings indicate the fundamental relevance of HE participation to young people's post-MMFD transitions. Despite the programme being intended to produce rapid labour market insertion, this is at odds with the priorities and decision-making of graduates and the possibilities on offer in the local labour market. Given a context where HE is rapidly expanding and is viewed (accurately or otherwise) as a pathway to social mobility (Sánchez-Soto and Bautista León, 2020), it is unsurprising that the most motivated and academically achieving young people from low-status vocational pathways are seeking to capitalise on any opportunity to pursue tertiary education. As Marginson (2016: 414) argues:

> the ubiquitous growth of tertiary participation and the scramble for relative advantage within education are both sourced in the universal family desire for betterment, in social systems in which higher education functions as a positional good in a partly zero-sum world and can never fully satisfying all who enter it.

Indeed, the quality of learning experience and professional development graduates were able to extract from their HE experiences, and, thus, the transition outcomes of the MMFD, were unequally distributed by gender and class. As Marginson (2016: 430) continues, the purported mobility and inclusion benefits of HE participation will only be maximised when 'the material and cultural conditions governing access and completion are equalised as far as practicable'. It would be advisable therefore to reconsider how the MMFD interacts with a context where young people consistently adopt a pragmatic of HE-prioritisation (mediated by their gender and class positions). Alternative approaches to training curricula, career guidance, student support, and interventions in the youth labour market could be formulated to support young people's transitions of choice into higher education, promote more equitable HE experiences, and ensure that employment-based routes are of sufficient quality as to offer a viable pathway to young people's aspirations for a better life.

7.5.3. Trajectory continuity

A further important facet of young people's post-MMFD transitions was their ability to maintain some degree of continuity in their trajectories. This does not imply that transition is only deemed 'successful' if young people execute their plans as articulated at wave one; these naturally evolve over time in response to experience. However, there were important differences in the classed and gendered obstacles that young people encountered when trying to pursue their desired pathways, which interrupted the continuity of their transitions and weakened the value and impact of their dual training.

Rosa and Carlos serve as two illustrative cases of how graduates' trajectory continuity was mediated by gender and class. They also represent the 'outlier' cases referred to in section 7.3.1. Both entered the Maintenance of Electronic Systems MMFD programme for similar reasons, informed by financial necessity and family histories, but did so based on a pragmatic of leveraging dual training for a more non-conformist end. Carlos planned to attend an elite public university and pursue a career in Nanophysics. Rosa initially chose the industrial *carrera* over a long-standing interest in Veterinary Sciences, but later reversed this decision upon graduation. Exploring the contrasting evolution of their trajectories demonstrates the role of class, gender, and certain MMFD policy features in helping graduates to maintain continuity in their onward trajectories and achieve the programme's intended professional outcomes.

At wave one, Carlos planned to apply to the Universidad Nacional Autónoma de México (UNAM), the highest-ranked university in the country, to study Physics. UNAM has a famously competitive

entry process and single digit acceptance rate (Sánchez-Soto and Bautista León, 2020), so this was a highly ambitious aspiration. This also made him the only participant planning to study outside of his hometown. Like Roberto, Carlos lived alone with his father and was expected to maintain a degree of financial independence.[26] The dual and Benito Juárez scholarship payments were just sufficient to support this and avoid additional work, allowing him to complete a voluntary social service project: *I completed my [social] service […] while I was in dual training […] because it was in the morning and in the afternoon, I would leave and […] I could go and do my…my service, my social project* (Carlos W2). This project became the basis of his successful application for a scholarship, not to UNAM, but to another of Mexico's top universities. The scholarship waived all tuition fees, but not living expenses. In Carlos' case, pandemic lockdown was somewhat helpful as he could study remotely for the first 18 months, remaining at home and drastically reducing his living costs. Shortly after wave three, Carlos was due to relocate to the university city and live independently for the first time. Long-term, he planned to support this using part-time work, which he believed his dual experience would make easy to secure. In the short-term, wealthier relations had agreed to fund the transition period:

> *We have relations, that, well, they have a large business. They're going to help me for a while, with, with the financial aspect and then also I've already considered the…where I will live and with who to…to help most of all with costs. […] once I'm there, I'm going to look for a job to be able to…take care of myself on my own.*
>
> (Carlos W3)

Undoubtedly, this next stage in his transition contained many important risks to continuity: the challenges of finding employment; the learning and time costs of combining work and study; and the reliance on short-term support from family members. Nonetheless, Carlos' completion of his first year in an elite university was already a notable, and highly divergent, outcome of dual training. This was made possible by the dual scholarship acting as an effective mechanism against additional work, by the resources and willingness of his relatives to invest in his education (recalling the potentially gendered nature of this decision-making; Guerrero and Rojas, 2020; Miranda Guerrero, 2007), by the cost-saving effects of distance learning, and by his own personal drive to obtain an elite education.

Rosa, meanwhile, entered the same Maintenance of Economic Systems programme, having selected it over her competing, 'outlier' interest in Veterinary Sciences (see section 7.3.1 for the classed influences on this decision). During her training, Rosa experienced routine sexual

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[26] See section 7.5.4 for further discussion about the nature and form of financial independence/contribution expected of men and women.

harassment in an all-male workplace and came to see the industrial sector as an inhospitable place to pursue a career. She had also internalised messaging about her own physical capacity for industrial work. She therefore chose to reverse her decision and pursue Veterinary Sciences at university:

> *The truth is that I felt quite weak physically in terms of lifting […] yes I could perform all the tasks that I was...I was given, but it was a little more difficult for me than for the men who were with me, because I had no female colleagues [...] I saw how the maintenance technicians looked at some of the girls and [...] I said, 'imagine when I am a worker and I'm not looking at them or, or, or even when I turn my back on them and they can do the same to me' [...] I know that there is this [harassment] everywhere, that changing carrera is not going to change the fact that...well, this happens, but...yes, I am not going to be so present in spaces like this.*
>
> (Rosa W2)

Having altered her trajectory based on these gendered factors within the industrial sector, Rosa's choice of higher education institution was also shaped by a pragmatic of harassment avoidance, again expecting that this risk would be encountered in all spaces and could only be minimised:

> *There was a time when there were a whole string of complaints, made by women […] here in the [university I am attending] there were some, like, complaints made by [female] students about some [male] teachers, but in [the other university I considered applying to] there were loads, loads, […] there are teachers who…who, well, practically they tell you if you wear a skirt for the presentation, well, you're going to get more points […] it's something I wouldn't like to experience.*
>
> (Rosa W2)

Despite these challenges, Rosa adapted well to her new specialism. However, by wave three, she had left HE and entered the labour market. Her family's financial situation had become increasingly precarious due to pandemic-related loss of income and family ill health. Akin to Roberto's pragmatic of survival, Rosa first found non-relevant, informal work in a shop, where she was poorly treated by her employer, before joining the assembly line of a large factory. She had returned to the industrial sector, but in a role that required no training or experience, employing predominantly women to sew airbags for the automobile industry (Torre, 2019). The work was low paid and did not contain opportunities for progression. Many of the industrial jobs more closely related to Rosa's MMFD training were explicit in their preference for male candidates. Rosa therefore adjusted her ambitions towards an even more feminised industry, echoing her peers' pragmatic of professional self-preservation: she hoped to gain a technical qualification as a beautician and one day run her own salon. However, she could only access the financial stability and credit required to do so through a formal industrial job, however low-quality.

Having faced a variety of gendered and classed obstacles, Rosa was left with a disjointed professional history that was difficult to convert into any of her preferred pathways. The longer she spent in non-relevant work, the harder it would become to recover the labour market position ostensibly offered by the MMFD (ILO, 2022). A gender-blind approach to selecting and overseeing host firms, weak sexual harassment policies, and a lack of gender-conscious mentoring and career guidance left Rosa alone in navigating the challenges of her transition. The process of gender socialisation that takes place during apprenticeships can be punishing for female students that attempt to pioneer in male-dominated fields (Lamamra, 2017). This blocks, moulds, and fragments young women's trajectories in ways that contribute to persistent gender segregation. As Lamamra (2017: 381) highlights:

> When relating to the other workers, apprentices acquire knowledge about the job, but they also learn what it means to be a professional where the work is mainly undertaken by those of one sex rather than the other. By extension, they learn what it means to be a woman or a man.

In the industrial sector, such discrimination and socialisation processes combine to disproportionately trap working-class women in the lowest-paid and lowest-quality forms of blue-collar work (Torre, 2019). Indeed, despite the similarity of their starting points, Rosa and Carlos' attempts at pursuing 'outlier' trajectories materialised very differently: one able to pursue his outlier ambitions; the other returned to a sector reproductive of her original class position, but in the lowest quality and status work of its kind. As a result of her relation to grammars of gender and class, Rosa had had to variously combine the pragmatic of conformist non-conformism with pragmatics of harassment avoidance, economic survival, and professional self-preservation, leading her further and further away from her original goals.

These two contrasting cases highlight the threats to trajectory continuity that exist for many dual trainees. The fragility of class positions (López-Calva and Ortiz-Juarez, 2014) means that trajectory outcomes are equally fragile, particularly as regards education. Particularly in LMICs, young people often play an important role in responding to chronic poverty and shocks to the family (Morrow and Crivello, 2015). While most participants in the study were successful in entering HE, many faced the continuous possibility of adjusting their plans or ending their studies in response to changing family circumstances. Claudia, for example, was progressing well in a degree programme at a private university, when:

> *Then came everything with the pandemic, there were more bills […] they were laying lots of people off, like, yeah the economy went down quite a lot, right? So I had to [drop out and] enrol in a university, well, that's government-run […] because there wasn't enough to sustain […] the private university.*
>
> (Claudia W2)

In Claudia's case, she was able to adapt her plans, re-enrolling successfully and sustaining the lower state university fees using income from her part-time accountancy role – although her planned graduation date was delayed by over three years. For those in the industrial sector where part-time work was scarce, these kinds of shocks were harder to absorb. More widely in labour market terms, the low quality and diversity of employment, as well as structural discrimination on the basis of gender and experience/age (AP STEM, 2019; Sánchez-Soto and Bautista León, 2020), led to fragmented pathways of short-term, non-relevant, and often informal employment (Castillo Fernández et al., 2019). Such employment histories have been found to produce scarring effects across the life course (ILO, 2022) and run counter to the formalising, stabilising aims of the MMFD.

As highlighted by Carlos and Rosa, there are MMFD policy features that appear to support or imperil trajectory continuity. The dual scholarship can prevent poorer students from taking on additional work, freeing up time for self-development, protecting learning quality, and providing a bolster of savings at the point of graduation. The current lack of policy features targeting gender inclusion and equality permits inequities to persist and deepen through women's fractured transitions. In Torreón, the CONALEP campus developed a job board/*bolsa de trabajo* which cultivated links with local businesses and directly matched dual graduates to vacancies. Several interviewees had found part-time work (of varying quality) in this way. More broadly, however, the evidence of trajectory discontinuity highlights the need to intervene in the local labour market and attempt to tackle longstanding issues of employment quality, youth exclusion, and gender discrimination (Sánchez-Soto and Bautista León, 2020; Torre, 2019).

7.5.4. Assuming adulthood

Young people's transitions are not confined to their movements in and out of education and the labour market. They are encapsulated within the broader shift into 'adult' social status (Bessant et al., 2020; Bourdieu, 1993). For participants, that process of assuming adulthood was marked by gendered and classed expectations and responsibilities which altered their trajectories (Brannen and Nilsen, 2002).

Questions of money and financial independence were strikingly gendered. Roberto and Carlos both lived in single parent households with their fathers. Both households faced financial difficulty, with the expected response for the young men being to ensure their financial independence. They both entered dual training partly to secure that income and lived as somewhat separate economic entities from their fathers. In Carlos' case, his success in obtaining various scholarships was sufficient to satisfy that financial need. For Roberto, it became the defining feature of his transition as he

pursued a pragmatic of survival, constantly battling to maintain his economic independence. Young men in single parent households headed by women (such as Marco and David) were subject to similar financial difficulties, but emphasis was instead on supporting their personal interests and ambitions. The same was true for families with relatively stable finances who could prioritise HE. For young women from very low-income families, their contribution to the family was based not on securing their own independence, but on generating income for the household: *I pay for petrol. Sometimes I pay for food, sometimes I, like…I pay the light or the water [charges] […] I don't manage the money, I just give it to my parents, but I'm aware of what's being done* (Erika W1).

The Mexican social and policy context might be described as one of 'familialism by default', in which public provision offers minimal alternatives to family care and there are multi-directional financial obligations within generational chains (Saraceno and Keck, 2010). As such, all young people habitually contributed to household costs (*aportar a la casa*). Nonetheless, the above examples demonstrate how expectations about financial control, independence, and family responsibility were patterned by young people's gender and the gender make-up of their households (Falicov, 2001; Molyneux, 2006). The question of what it means to be a contributing 'adult' was less pressing when family finances were healthy, allowing young people to maintain a 'dependent' status as 'young' or 'emerging' adults (Arnett, 2014; Furlong et al., 2011). However, when economic difficulties surfaced, young people assumed increasingly adult, and increasingly gendered, economic roles in their households. These roles had ramifications for what pathways and projects young people could pursue (Neale and Flowerdew, 2003), distributing household finances and priorities based on individualism as a form of collective leadership for men and communitarian self-sacrifice for women (Diaz-Loving and del Castillo, 2010; Falicov, 2001).

This was further reflected in young people's role in the social mobility and financial success of the whole household. As Enrique (W3) highlights, (particularly eldest) sons face a particular set of expectations in Mexican society (Stahl and Adams, 2023; Velez-Grajales et al., 2014). These can generate a pragmatic of masculine mobility that, while offering some degree of independence and support for personal ambitions, produces a significant emotional burden and weight of responsibility:

> *[My family] see me and...they have a lot of hope in me. [...] they feel I'm like the family's opportunity, to get out of this hole [...] in a certain way I'm afraid. I feel that yes, yes, I have the possibility of being able to do that, but I'm afraid of failing [...] it's difficult to be responsible for the family's expectations, right? [...] I've never talked about it with them because they also have hope in me, so [if] they feel that I'm afraid, well... […] it's a little bit of like…an old school thing, right? and like [the idea of] 'the man'.*

As highlighted in section 7.5.2, if women were pursuing higher education (usually with the aim of upward social mobility), they were most often supporting themselves through paid work. Men were more likely to have the financial backing of their households to concentrate full-time on their studies, perhaps an indication of the benefits this was expected to produce for the wider family (Velez-Grajales et al., 2014).

There were also changes in women's contribution to domestic and care work in the home and community as they aged into 'adult' status (Neale and Flowerdew, 2003):

> *At the weekends, if I'm not working, in truth I spend it cleaning […] I wouldn't like to say the word, but yeah, I feel this machismo in my house that…well, my brother […] he doesn't do anything. […] I remember when I wasn't working, [my mum] would ask me to do something, and I always complained […] she always told me the same thing, 'your brother works', and now I'm working, well, now she doesn't have an excuse, so I still don't understand why she doesn't ask him for…this extra that she does ask of me.*
>
> (Rosa W3)

As Rosa highlights, the assumption of a traditionally masculine 'worker' identity came in addition to expectations of women's domestic work. Indeed, the 'double day' phenomenon is a pronounced feature of life for women in Mexico who cross traditional gender boundaries into full-time work and higher education (Romero, 2008). Even where domestic or care work extends beyond the immediate household, it might remain un- or very poorly paid:

> *[As a babysitter for neighbours] I don't have a fixed salary, but, well, neither do I, like, [laughs] complain much because, well, I have dinner there, I sleep there, in the morning they give some lunch, some food […] they bring me home. So, well, really, they already give me something [laughs], it's already a lot.*
>
> (Blanca W3)

These same changes in domestic responsibilities were generally not mirrored in young men's accounts of entering adulthood. Assuming womanhood typically implied commitment and contribution to the collective good of the family and community, while more men were afforded the opportunity to invest time and energy resources in their personal development, with an expectation that this ultimately bring benefit to the whole family (Diaz-Loving and del Castillo, 2010; Falicov, 2001).

Young people's developing time use was also influenced by their family's class position. For those maintaining an 'emerging adult' status and pursuing a pragmatic of complete HE-prioritisation, leisure time and personal or cultural interests were important in daily life:

Recently I've been taking violin classes […] so I believe that that is something that, like, we should all prioritise, have time, like, for yourself as well […] to calm yourself, to distract yourself […] focus on something that maybe in the future or something in your classes will, will improve you.

(Alma W3)

At [university] I took up a sport and it's football […] it's out of the school routine and you distract yourself a little [...] Also socially, for example […] the conversations about 'what subjects are you doing?' […] 'I'm having a hard time with such and such a subject', that's also great [...] I've noticed that in those moments I forget about school […] then I get home a little more relaxed, [smiling] I'm happier for playing sports [laughs].

(Rafael W3)

These opportunities contributed to the ongoing reproduction of class difference, as higher-class graduates had more time to devote to the development of social capital and their personal well-being (Stalker, 2011; Zeijl et al., 2001), articulating a pragmatic of self-care and self-enrichment. For poorer students, by contrast, even adequate sleep came under pressure from multiple competing demands, leaving no space or time in daily life beyond work and study:

It's really difficult [laughs] because…I get to the company really early and I get out…half an hour before starting classes, so…and the classes finish super late and the homework, and I don't have time for anything else [laughs].

(Adriana W2)

Sometimes I sleep very little. I almost always sleep five or six hours […] These days I don't have time to go out, I don't have time to be with my family.

(Atziri W2)

Indeed, for Atziri, even her future conception of time was extremely limited by the exceptional demands that she predicted her chosen pathway would exert on her:

I really visualise myself being a businesswoman […] a company implies a lot of time, a lot of dedication, a lot of work, a lot of effort […] I'm going to be really, really, really, really busy, I see myself working 24/7 everyday, perhaps there won't, there won't be the chance to relax, there's no going out, there's no, there's absolutely no social life […] I'm willing to pay the price.

(Atziri W3)

These experiences demonstrate the powerful interconnections between gender, class, and age that intercede in young people's transitions into adulthood. Young people are growing into their new identities not just as workers, students, and individuals, but as men, women, and members of the social class hierarchy. Their plans and trajectories are shaped by that adult 'becoming' in ways that do not fit neatly into uncomplicated narratives of school-to-work transition associated with dVET

policy success (Neale and Flowerdew, 2003). Indeed, the unitary focus on the individual acquisition of skills and construction of a life-course evoked in dual training discourses fails to capture the centrality of family and the collective (*familismo*) for how young people navigate into adulthood in Mexico (Diaz-Loving and del Castillo, 2010; Hietanen and Pick, 2015). Notwithstanding important gender and class mediations, for the kinds of young people engaging in vocational education and the MMFD (i.e. those living in or adjacent to poverty), the advancement of the family, the attainment of a better collective life, and the subordination of the self to these communitarian goals is foundational (Aldinucci, 2022; Diaz-Loving and del Castillo, 2010; Falicov, 2001). It would therefore be powerful to consider how dual training structures interact with family units, not only individuals, recognising that personal transitions and pragmatics are necessarily intertwined with collective transitions and pragmatics. There might be opportunities to reshape constraints that stem from social conceptions of adult responsibility (particularly in relation to gender) and more effectively design dual training structures to support the collective aspirations that inform the transition pathways of individual students.

7.6. Concluding comments

In sum, there is evidence of various and intersecting influences of the subjective grammars of class and gender on MMFD participants' experiences of training and transition. These mediate all stages of youth transition processes, from educational entry to onward trajectories and outcomes. In tandem, a variety of youth pragmatics exist in co-productive relations of reproduction and transformation with these grammars. As relates to their (changing) class positions, young people variously pursue pragmatics of familial continuity, labour market negotiation, HE-prioritisation, vocational prioritisation, economic survival, conformist non-conformism, and self-care/enrichment. As relates to gender, young people articulate pragmatics of gender-based resilience and resistance, individualism-exceptionalism, inequality hypocognition, professional self-preservation, masculine mobility, and harassment avoidance. As has been highlighted, these intermingle through intersecting identities, just as subjective grammars do, and are adopted, adapted, and discarded as circumstances and contexts change over time.

8. Findings: temporal grammars

8.1. Introduction

In this chapter, I explore Grammars of Youth that relate to *time* as a specific context in which young people's interactions with education policies are embedded. Such *temporal grammars* generate a cohort effect, such that the experiences and outcomes of students entering the
the Modelo Mexicano de Formación Dual (MMFD) at one moment might be very distinct from those of past and subsequent waves of entrants, even where subjective and locational grammars are shared or remain constant. For the participants in this doctoral project, the most influential temporal grammar impacting their training and transitions was the global Covid-19 pandemic, beginning early 2020.

At first glance, the unprecedented enormity of the pandemic as a disruption to life across the planet might encourage us to disregard these 'anomalous' experiences as too out of the ordinary to be reckoned with in day-to-day educational policymaking. However, there are three compelling reasons to take evidence about the pandemic's consequences seriously. Firstly, the broad cohort of young people most directly impacted by these disruptions could carry scarring effects that impact their economic, social, and civic participation right across the life course. Designing interventions that counteract such effects will require nuanced understanding of the multiple forms of adversity that young people have faced. Secondly, dual training is actively promoted as an educational route to bolstering national crisis resilience (Esmond and Atkins, 2022; Vanderhoven, 2023). Data capturing the performance of dual training models operating under crisis conditions therefore allows scrutiny of discourses about dVET in real-world context. Finally, predictions suggest that crises, whether environmental, economic, or health-related, are only likely to become more common in the near future (Georgieva, 2022; ILO, 2023). Therefore, day-to-day educational policymaking increasingly *does* need to reckon with its capacity under crisis conditions, if it is to realise lasting positive change for young people and broader society.

This study does not make comparisons between different cohorts of MMFD entrants. However, it was nonetheless possible to detect pandemic impacts that were specific to students graduating in academic year 2020, and others likely affecting all young people connected to MMFD training in the years preceding and following the pandemic. In the following discussion, these are explored first in relation to impacts on the MMFD experience, and second in relation to impacts on outcomes for young people in their ongoing transitions.

8.2. Temporal grammars and the MMFD experience

8.2.1. Pandemic disruptions to school-based learning

As wave one interviews were taking place in March 2020, schools and businesses in Mexico began to close around us. In fact, interviews with three of the participants took place via Zoom in April 2020 due to the changing public health environment. In the early stages, staff, students and government officials all assumed that this would last a matter of weeks (Cárdenas et al., 2022). Indeed, even in those delayed interviews, the pandemic did not feature prominently as a topic of conversation, as everyone waited for the inevitable 'return to normality'. Of course, this did not come for several years, and by the conclusion of data collection in February 2022, the WHO was still far from declaring an end to the global public health emergency. In fact, Mexico had some of the longest and most complete school closures in the world, with schools remaining entirely closed between March 2020 and June 2021 (UNESCO, 2023). Schools and students therefore had to gradually reckon with a digital model of distance learning that could continue under prolonged lockdown conditions. Even as primarily work-based learners, this was also true for MMFD students (Avis et al., 2021).

As study participants were due to graduate from their MMFD training in August 2020, their final months of training were characterised by an assortment of emergency measures taken to maintain their vocational training at CONALEP. In Saltillo, this included distributing homework tasks via WhatsApp, to be uploaded to the same platform where weekly placement reports were usually submitted. In Torreón, some students continued to receive their Saturday classes online, facilitated by national agreements to provide digital learning platforms (Cárdenas et al., 2022). As Marco (W2) highlights, even this best-case scenario presented substantial challenges to students and teachers:

> When the lockdown started […] we were just getting the hang of...all these applications […] Teams, Zoom […] the teachers also didn't know much about this stuff yet and because everything was new and suddenly fell [on us] […] through a camera you do lose a bit of the practical side […] sometimes you forget, or...you don't even know what they're talking about.

This period of adaptation and reorganisation occupied the remaining period of students' dual training. Issues of digital connectivity and preparedness were faced by teachers and students alike (ILO, 2021). As such, there was a substantial loss of curriculum as students either did not fully receive, or struggled to engage with the theoretical content planned for their final months of training. Curricular losses of this kind have been linked to substantial reductions in future earnings (ILO, 2020).

In relative terms, MMFD students appeared to receive a greater degree of pedagogical support than many in primary or lower secondary education (Roldán Vera and Robles Valle, 2020). Government reliance on didactic TV broadcasting and profound inequalities in internet access left young children and those in rural areas with particularly large learning shortfalls (Cárdenas et al., 2022; Zapata Hojel, 2021). As older students in urban areas, study participants were better equipped to pursue independent online learning. Nonetheless, as the majority of responsibility for learning transferred from the school to the home, this left space for inequalities of resource, environment, and family education to play an even more decisive role (Zapata Hojel, 2021). As Roldán Vera and Robles Valle observe (2020: 23): 'In a deeply unequal society, the homogenizing character of the school space is lost as long as schools remained closed'.

Graduation progressed without participants having to demonstrate adherence to accreditation standards. As such, the loss of curriculum and learning did not jeopardise completion, but neither did graduates possess the full range of knowledge and skills they had anticipated. Graduation ceremonies were cancelled, and some participants reported delays to administrative aspects of their graduation:

> *I've struggled in the two firms I've been [working in] […] [the] professional certificate [for dual]…they only gave it to us…last month[27] […] I couldn't present it at the time when I entered either of the two firms in which I've worked […] It hasn't given me the opportunity to work in my own way, to enter at my [level, as a technician].*
>
> (Roberto W3)

Roberto's example of a delay of more than a year in receiving his MMFD certification suggests a significant degree of administrative disorganisation. As he highlights, this directly undercuts graduates' ability to signal their differential value on the labour market using their dual certification – a dVET mechanism intended to maximise chances of relevant employment. As discussed in chapter seven, Roberto was already struggling to exercise a pragmatic of labour market negotiation due to his financial circumstances. This was further undercut by such delays. Indeed, given that graduates were facing such a challenging economic climate, clear communication and timely administrative processes were more important than ever (ILO, 2021).

Furthermore, in wave one interviews, some students mentioned plans to participate in additional certification exams run by the employers' association and MMFD intermediary COPARMEX. These exams, which use German certification standards and confer an additional layer of professional credibility to MMFD graduates who pass them, were a significant point of pride for policymakers in

[27] Interview conducted in October 2021. Students had graduated from the MMFD in August 2020.

Coahuila. As one senior figure told me: *there are hundreds of dual graduates across Mexico, only ours are certified*. However, the exams were cancelled for 2020 graduates. Participants were not informed of the change, or how they might take the exams in the future: they were simply never mentioned again. This was despite the purported importance of the exams as communicated to students: *It gives you another value […] Professional technician. It's a higher level for when we leave here […] it counts a lot in our lives […] to perform better in our jobs* (Roberto W1).

Thus, participants experienced important skill development and signalling losses as a result of emergency school closures. This was exacerbated by the uneven digital preparedness of CONALEP structures and staff, young people's own limited access to and familiarity with digital learning media, and deficiencies in administrative and communication processes which compounded the effects of disruption. Such issues were widespread, and arguably more notable, in other areas of the Mexican education system during the pandemic (Cárdenas et al., 2022). Nonetheless, reported administrative issues point to significant strain on CONALEP systems, with campuses receiving minimal additional resource for managing a programme as complex as the MMFD.

8.2.2. Pandemic disruptions to company-based learning

For MMFD students, even more drastic than the overnight closure of schools was the sudden loss of their company-based learning (Avis et al., 2021). In addition to the obvious health imperative, dual trainees' status as students, rather than workers, prevented them from being hosted in the workplace once schools were closed (c.f. Cedefop, 2020b). For the majority of participants, the day schools closed was the last time they had any contact with host firms:

> *I think it was really radical because […] in the factory they told us […] 'we will keep in touch in case something happens, and you can come back to the factory'. But they didn't say anything to us [laughs].*
>
> (Alma W2)

> *We didn't have contact with the company again. [COPARMEX and CONALEP] are the only ones that were giving us activities and support […] with the company we completely lost communication with HR.*
>
> (Roberto W2)

As placements had been, at least ostensibly, organised around a rotation plan which successively exposed trainees to different facets of their *carrera* and the industry, this resulted in significant gaps in the learning and skill profile of participants:

It was two or three months in the company that were taken away from us […] we couldn't finish well and those months were to be devoted to final training, we were going to do a recap of all the areas where we'd been and emphasise certain points […] they were going to give us our certificate [to say] that we had complied with certain training.

(Claudia W2)

I couldn't finish the dual model […] I was going to be in the plant and working on very important machines, and well in the end I couldn't because of the pandemic, so in terms of learning for dual, yeah it affected me a lot.

(Carlos W2)

The very high dependence on company-based learning that characterises the MMFD curricular model exacerbated this loss of learning. As students' skill development was almost entirely firms' responsibility (especially in Saltillo where Saturday classes were not held), the disruption of work placements caused by the pandemic left a vacuum that schools were unable and unprepared to fill. CONALEP instruction appeared to run in a parallel and disconnected fashion, without developing explicit and mutually reinforcing links between the curricular content seen in the workplace in pursuit of defined occupational competencies (Eichhorst et al., 2013; Gessler, 2019). Greater quantity, alignment, and vocational relevance of school-based provision might have strengthened schools' ability to maintain a greater degree of skill development through remote learning.

The loss of company-based learning also meant that the duration of work experience was severely truncated: *I think that we did miss out, more than anything in terms of our CV and looking for new jobs, to show all of this as evidence, but it wasn't possible to finish* (Claudia W2). Students' graduation with a minimum of a year's experience was one of the principal mechanisms through which the MMFD was expected to realise its purported employment benefits. For those students who had only started the programme in fifth semester, this was especially impactful: *I only lasted eight months in the company, I missed out on four* (Enrique W2).

A further important impact for students was the loss of their dual scholarship. As firms were no longer benefiting from students' labour and students were no longer incurring the direct costs of participation, payments were stopped: *they told us that…since we weren't going to be going to the firm, so as not to…affect them [firms] economically, well, they weren't going to be paying us* (Rosa W1). However, this did not account for the reliance that many dual students had on that income for their personal costs and those of their households (see chapter seven):

When I stopped going to the firm, I was scared because in reality, like...the work there was my support to keep working, to keep myself moving, keep, well, like, eating, right? So…I was fearful

> *more than anything for my economic stability […] because I haven't always…had the luxury of, of asking [for help] from my parents.*
>
> (Marco W3)

Due to the governance arrangements of the MMFD, students fall through the cracks of typical institutional responses to crisis conditions, benefitting neither from the legal protections of labour laws nor the continued social protections of state scholarships (Cedefop, 2020b; ILO, 2021). Considering the socio-economic vulnerability of many apprentices, protecting apprenticeship incomes during the Covid pandemic and similar crises can be decisive for longer-term transition outcomes. Doing so can promote social mobility and protect gains already made over the course of training (Montacute, 2020). The 2,000 MXN dual scholarship levied from firms in Coahuila would have been hard (likely impossible) to maintain once students were no longer in workplaces. However, recognition of poorer students' dependency on this income could have prompted a targeted intervention from the Secretariat of Public Education or COPARMEX, helping to alleviate the economic hardship that many families faced after a simultaneous loss of multiple incomes (see section 8.3.3) (ILO, 2021; OECD, 2021). Longer term, reassessment of students' precarious institutional positioning could be used to secure more robust protections (see chapter nine).

Although the suspension of company-based training in March 2020 was the biggest short-term impact of the pandemic for most participants, two students, (Javier in Saltillo and Armando in Torreón), reported that their employers did not cease their placements with the closure of schools. Both students continued physically attending the workplace until May, when cases nearly tripled in the space of a few weeks (Dirección General de Epidemiología, 2020a; 2020b). At this point, Javier was let go and Armando was sent to work from home for the remainder of his training. These examples suggest that systems of oversight and monitoring for MMFD programmes were very weak, as it was certainly in contravention of government guidance, if not actually illegal, for students to continue in their workplaces while lockdown measures were in place and students were not overseen by CONALEP (DOF, 2020).

For most other students, there were indications that such shortcomings in communication and monitoring were an aggravating factor in the decisive end to the relationship with their firms. Participants reported frustration and surprise that CONALEP did not act as a more effective intermediary in maintaining student-firm relationships. Many found themselves relying on informal channels for information about the plans and fate of their host company. Rather than a direct product of the emergency situation, this rapid and complete loss of formal contact appeared to be an outcome of historically poor systems of communication that frequently relied on students to act as the intermediaries between CONALEP and firms, rather than vice versa. Under the pressure of

pandemic conditions, this fragile structure was no longer functional, undermining two mechanisms key to the MMFD's aim of smoothing employment transitions: firstly, the contact and proximity to industry which would expand graduates' professional networks and give them access to privileged information about sector hiring practices, and secondly, the possibility of a job offer from their host firm upon graduation (Cahuc and Hervelin, 2020). As will be explored in the following section, the overnight erasure of these two functions had substantial effects on the employment outcomes of graduates.

In response to the wholesale disruption of their MMFD training, the primary pragmatic adopted by participants was one of waiting it out. Circumstances were simultaneously so dramatic and so gradual in their evolution that young people could only wait for news from schools and employers as to whether a return was possible. As such, significant time was lost during which young people could have pursued more proactive measures to maintain their learning and development. Only once the official graduation date had passed did participants have the conclusiveness needed to consider alternative strategies.

8.3. Temporal grammars and MMFD outcomes

8.3.1. Labour market entry in the pandemic

Promoting the smooth labour market entry of dual graduates is one of the most explicit and central aims of the MMFD. It was also the outcome most severely disrupted by the pandemic. This was especially true for students in the industrial sector. In wave one interviews, four of the nine industrial sector students reported that their employers had already informally offered them work at the end of their training. These offers disappeared once lockdown was enacted and training suspended: *[The firm] where I was doing my placement didn't hire a single dual student, in fact the majority of dual firms didn't hire any dual students* (Rafael W2). This loss of informal job offers was severely disruptive to many participants' plans and post-graduation trajectories:

> *I think that if the illness hadn't have existed I would still be working there [in the dual firm] […] the engineer had told me that he did want me to stay working there, but well, then because of this [the pandemic], I didn't stay in the firm.*
>
> (Roberto W2)

> *If we weren't in a quarantine […] I would be in a firm with a permanent job right now […] but in place of all that, this [the pandemic] came and changed everything.*
>
> (Erika W2)

Marco and Armando were the only students who received an offer of employment from their dual firm upon graduation. A further two participants from service sector *carreras* received offers from their host firm within one year of graduating, one declining because they had already found work elsewhere. As such, four of the five accounting students in the study received offers of employment from their host firms and three took up this employment, which was at technician level or higher. By contrast, Rafael was the only industrial *carrera* student to receive an offer of work from his host firm, but this was for a non-relevant assembly line post, which he declined. This reflects the 54,000 person reduction in rates of employment in large firms (who are core employers in the industrial sector, but less so in the services sector) between 2020 and 2021 in Coahuila (INEGI, 2021b: 1).

Unable to access work in their host firms as hoped, industrial graduates then struggled to find employment elsewhere as their truncated length of work experience was less than the minimum requirements set by many employers: *I've struggled a lot because of the circumstances [of the pandemic] to find a job in what I studied […] they are asking for a year, and I don't have a year's experience* (Roberto W3).

Broadly, there was a recognition that the local labour market had been fundamentally altered by the simultaneous supply and demand shocks of the pandemic (INEGI, 2021b), and that graduates' transition outcomes were highly dependent on the health of that market. For MMFD accounting graduates, the relatively stronger performance of business and professional services through the pandemic crisis (INEGI, 2021b; Ruch and Taskin, 2022) supported positive employment transitions, while industrial graduates, whose sector has been more acutely impacted by disruptions and weakened demand in global supply chains (ILO, 2023), faced substantial challenges:

> *Right now, it's very difficult to find work, because when the stuff with the pandemic started […] they let a lot of people go, who like…are struggling right now. […] It would be out of my control because I can't decide about, about coronavirus and all that.*
>
> (Raúl W2)

> *Right now it's critical with the pandemic, work is very, it's very scarce […] although it's very recognised that here, in Coahuila there's lots of work, well, right now a lot of people are struggling, in fact when I went to [the firm where I am working now], there were 300 of us and they only took on 50 people out of the 300 […] it's very, very tight.*
>
> (Roberto W2)

Industrial graduates reported that challenging labour market conditions persisted beyond the initial lockdown up to wave three: *As the pandemic was ending, I started to look [for work] and you know they still weren't taking people* (Raúl W3). This included a preference, where firms were hiring, for older and more experienced workers:

I have been looking [for work] […] there isn't anything for my age right now, the majority are looking for 20 or 25 years and older.

(Rosa W2)

The majority of firms were asking for a bit more experience, because I look younger […] I feel like they didn't believe that I had done dual. So, the majority of firms were asking for a minimum of three to four years work experience […] I was [in the company] a year and half and that's not even half of what they were asking for.

(Rafael W3)

Such hiring practices among firms are a documented risk for apprenticeship transitions at times of crisis (ILO, 2020), and young people have been most impacted by the employment effects of the pandemic (ILO, 2023). This is further compounded by the pre-existing prevalence of discrimination against young job-seekers in Mexican labour markets (Sánchez-Soto and Bautista León, 2020).

As a result of these challenges, industrial graduates who could not afford to sit out of the labour market pursued a pragmatic of economic survival,[28] consequently finding themselves in one of two positions: with formal jobs at the lowest rungs of industrial production, working in operator roles that required no training, or in non-formal and/or non-relevant employment in sectors such as retail and hospitality.[29] Indeed, young workers have proven particularly vulnerable to rising levels of informal employment in the pandemic aftermath (ILO, 2023): *Because of the Covid pandemic, well they [the host firm] had to let us all go. Well, as I was struggling a bit economically, my family and I are struggling economically, I started working in a shop* (Atziri W3).

For those graduates working in operator roles in large factories, they hoped that with time they might be promoted to a technician role in the same firm. It appeared routine for employers to promise this was possible after six months' induction to the workplace and its procedures:

They told me I have to gain experience […] they've got me moving between assembly and machine assistant, to get to know the processes of the machines better and everything, and in six months they will give me an opportunity as a maintenance technician.

(Roberto W2)

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[28] In some cases, this was combined with a pragmatic of HE-prioritisation, such that higher quality formal employment might have been possible if participants were willing to forgo HE participation. However, this remained a high-risk strategy as such employment was heavily restricted by crisis conditions.

[29] Despite being one of the lowest in the country, Coahuila's rate of labour informality sat at 36.1% in 2021, and unemployment, informal employment, and underemployment all increased notably in the region during the pandemic (INEGI, 2021b).

Right now, I'm in a factory, I'm like a production operator, but I'd like at some point to become like…well a maintenance technician […] but I have to have been there for six months for them to be able to make the change, so right now that's what…I'm waiting for.

(Rosa W3)

However, no participant was able to use this route to secure employment as a technician within the lifetime of this study, instead finding themselves trapped in low quality work for which their technical education was not required. In fact, under the extremely challenging labour market conditions of the pandemic, graduates' experience in the MMFD was often key to securing even this level of industrial employment. Participants suggested that their school-based classmates struggled to enter the sector at all, their CONALEP diploma carrying little value without some additional workplace experience:

The school-based students do have jobs…more…like, normal ones [in restaurants or shops] […] we have more opportunities to work in…in something serious, in a company where you have a full-time schedule, you have your life insurance, you have your…monthly pay check, because well, really the experience that we have […] it's more important than being in a restaurant […] I'm not thinking of spending my life […] earning my living in restaurants.

(Enrique W2)

Service sector graduates also suggested that, while they had experienced very successful employment outcomes, this was not necessarily true for their school-based course mates, citing the work experience they had accumulated as decisive:

I have classmates that left from pure prepa, without doing dual, [without] going to a firm, well, they have struggled a lot to find work and the work they get given, it's not related to their carrera, because obviously they [employers] already want them to have some experience.

(Claudia W2)

Indeed, in addition to working in a sector less impacted by the Covid-19 crisis, service sector participants were also more likely to have entered the MMFD in third semester, meaning they had been working in their typically small host companies for up to 20 months at the time of school closures. As a result, they had very strong and direct relationships with employers in charge of hiring decisions (Valiente and Scandurra, 2017). They also had more time for the acquisition of higher order skills desired by employers (Gessler, 2019):

My boss, who was the one who offered me [the job], she said […] my current boss, she's delighted to meet you, she wants to know how you work […] I I feel that [the fact] that I've come back, well it was my time on placement, [the fact] that they got to know me and well, having good communication with my team.

(Adriana W3)

In fact, the only service sector student not to receive a work offer from their host firm was David, who was rotated through three different companies during his training. This suggests that the shorter placements (i.e. entering the MMFD in fifth semester) more commonly found in the industrial sector, and fragmented placements akin to David's, did not provide sufficient time for rounded skill profiles and resilient employer-graduate relationships to develop, and were thus more vulnerable to crisis shocks.

Nonetheless, although not with their host firms, three industrial graduates were able to secure technician level employment in their sectors over the course of the study. To achieve this, Raúl had to abandon his earlier pragmatic of HE-prioritisation and by wave three had suspended his degree programme to work full time. Enrique and Erika both maintained a HE-prioritisation pragmatic, thus experiencing extreme time poverty and high levels of stress from the combination of demanding work and study. Enrique planned to endure a little longer and save enough of his wages to buy a motorbike, then quit his industrial job to work as a delivery driver. Erika had left the labour market by wave three to focus on higher education. In essence, the competing pressures of a crisis-state industrial labour market and a strong desire for higher education completion meant that no industrial graduate was sustainably successful in achieving the universal ambition of combining relevant work and study. Only Raúl seemed to have a longer-term future as an industrial technician.

One MMFD policy feature existed in Torreón that showed some capacity to intervene in graduates' unexpectedly complex employment transitions. The job board or *bolsa de trabajo* utilised CONALEP's network of connections to local employers to help match dual graduates to vacancies. Three participants found employment through this route and a fourth was offered a job but turned it down. This mechanism seemed an effective means of leveraging the connections that CONALEP was already developing as part of its teaching and MMFD delivery to improve employment transition outcomes. However, such vacancies were still dependent on the health and condition of the local labour market: only one successful match was made with an industrial graduate, and the available roles were not all of good quality. Furthermore, the preference given to MMFD graduates implies a further widening of inequities between school-based and dual graduates. This echoes broader concerns about how the prioritisation of politically significant, yet small-scale dual programmes can produce spill-over effects for the wider VET system (Vanderhoven et al., 2024):

> *I have a friend who wasn't in dual and he struggled to find work because he didn't join the job board […] he had to look for himself and he did say he took a long time to find [something] […] he's in a food shop […] anyone can enter [the job board], but [CONALEP tutor] gives them […] dual [graduates] get an advantage because […] we already have experience.*
>
> (Adriana W2)

Some students also suggested that further work could be done to ensure local employers understood the significance and content of the MMFD. Rosa (W3) suggested that the programme did not have sufficient profile to be legible to all employers as an advantageous form of preparation for the workplace that stood in contrast to standard school-based routes through CONALEP: *They think it's like short-term work experience placements […] really it was experience of real work […] [they should] make it more known […] so that they [employers] understand the very specific profile of the programme*. While this would undoubtedly help support the signalling mechanism of MMFD completion (Valiente and Scandurra, 2017), it might not do much to ensure that dual graduates access employment commensurate with their training if labour markets remain extremely restricted and resistant to employing young people over a plentiful pool of older, experienced workers. Indeed, graduates' various experiences of attempted or actual employment transitions highlight the decisiveness of the prevailing economic climate.

8.3.2. Higher education in the pandemic

Given the many challenges young people faced in finding suitable employment during the pandemic, it is unsurprising that HE participation was very high among participants (only Roberto did not enter university). Indeed, a pre-existing pragmatic of HE-prioritisation appeared to be strongly reinforced by pandemic conditions. At wave two, half of participants were only studying, and a further three were in low quality work, the sole aim of which was to support their university studies. As is common in times of recession and crisis, many students decided that this difficult period was best spent sheltering in the protective environment of higher education while they waited for the labour market to improve (Barr and Turner, 2013): *either we lose a year or it's better to keep studying* (Javier W2); *there's nothing left to do but wait* (Rosa W2). As such, the pragmatic of waiting it out adopted during MMFD training disruptions was extended and displaced to the HE environment by those who could afford not to work.

The high rate of HE participation was possible thanks to the permeability between the MMFD and HE: a feature not always typical of dVET models (Eichhorst et al., 2013; Gessler, 2019). This had the effect, on the one hand, of undermining the employment goals of the programme, as students prioritised their studies and often ceased seeking work. On the other hand, given the extremely challenging economic climate, this offered young people an avenue to continue developing their skills and prevent a 'loss' of time and continuity. Indeed, no participant in the study was ever not in employment, education, or training in a country where NEET rates hover around 20% (OECD, 2024). HE therefore allowed graduates to maintain a connection to their desired *carrera*, even when those industries were in substantial contraction. The fact that so many students were successful in

entering university is also partly a product of the local HE offer: Coahuila has several good quality public technological universities (which are particularly adept at serving lower-class students; Flores-Crespo, 2007) and, in this sparsely populated region, competition for places is not as fierce as in other regions of the country, such as those surrounding Mexico City (Hernández-Fernández et al., 2021; SEP & CONALEP, 2019). As such, the pragmatic of waiting it out in HE is likely not so readily utilised by MMFD students in central regions and cannot be relied upon as a protective mechanism in all contexts.

The pandemic also had its impacts on the admission process itself. For some students, adaptations made in crisis conditions worked to their advantage, as entrance exams were easier to manage online or forgone entirely, to be replaced by grade-based entry. For others, repeated delays and technological issues made the admissions process stressful and higher risk:

> *I had to be in the second round of admissions because the first time I did the exam I had lots and lots of problems with the computer and the internet […] [I had to] wait for the second round.*
>
> (Rosa W2)

Once admitted, given the universal shift to digital remote learning in Mexican universities, technological and connectivity issues posed a widespread challenge to graduates' HE participation. Although the participants in this study were, relatively speaking, digitally well connected – they all had access to personal devices and Wi-Fi in their homes – they still faced many technological barriers. Failures in equipment and internet connection for both students and lecturers meant that online classes were often difficult to follow or access. Indeed, HE institutions across Mexico struggled with the rapid transition to online learning, highlighting systemic inadequacies in hardware and training (Álvarez et al., 2020; Schmelkes, 2020).

Even where technology worked as it should, in a state where nearly 92% of households have a cell phone, but only 40% have a computer (Data-México, 2023), the majority of graduates were accessing university classes and resources on mobile phones, or, at best, dated computers, which made for a limited digital learning experience (Contreras et al., 2021). Students also lived in small homes with several family members attempting to live, work, and study in close quarters. Most participants did not have a dedicated workspace, and many did not have a private bedroom. As a result, their learning environment produced numerous distractions that undermined concentration and engagement (Schmelkes, 2020; Webber, 2021). These distractions, as well as technical failures, were often evident in interviews themselves:

At home there are loads of distractions, your mobile phone, your neighbours playing music, I don't know if you can hear them right now.

(Armando W2)

I hate being in the house and being distracted, with the dog barking […] as people come and go […] sometimes I don't pay so much attention because I'm watching what everyone is doing around me.

(Erika W3)

[There can be] an aspect of some theme, that perhaps you haven't understood very well from the classes, because it's really easy to get distracted at home by some situation. You're already distracted, and you've lost time from the class.

(Alma W3)

Issues with concentration were further exacerbated by the digital pedagogies employed by university tutors – a workforce which was poorly prepared for remote modalities (Salas-Pilco et al., 2022; Schmelkes, 2020). Explanations were not always clear and easy to follow, and instruction often relied on setting large volumes of self-directed work with little guidance. This in turn limited students' capacity to engage in other economic, familial, and recreational activities (Schmelkes, 2020). There were also some issues with HE tutors not delivering timetabled classes at all:

An online class is really different […] [the teacher] has his blackboard five metres away from the screen, so, well, it's difficult for us to make out what he's writing on the board […] [then] they give us an exam and we don't know what, what he's talking about.

(Atziri W3)

It's really heavy because […] when we're online, the teachers finish the class and they give us homework every day, but […] in person they're more understandable and more dynamic because the truth is…online almost nobody participates.

(Adriana W3)

My two teachers for my first two classes [of the day] they don't give the class at the indicated time […] they send me the work for the whole week, so I decide what day to do it [..] sometimes he [the teacher] tells us that we will connect [that day] because we have an exam.

(Rafael W3)

One facet of teaching that graduates found especially challenging in a remote HE context was receiving sufficient support and feedback on their learning and progress. They were accustomed from their MMFD training to direct and inter-personal feedback mechanisms used in CONALEP schools and the workplace, but opportunities to ask questions and clarify doubts were much more limited in an online environment, especially given HE tutors' limited digital pedagogical competency (Contreras et al., 2021; Schmelkes, 2020):

In CONALEP it wasn't online much and they would explain to us individually […] and they did it here [face-to-face on campus], but in [university] it's not like that, so it was […] a very radical change.

(Adriana W2)

It's not the same when they clarify your question through a mobile phone as when they clarify face-to-face […] when you want to learn, your doubts, well, they're not totally clarified.

(Marco W2)

By virtue of their dual training, graduates had also become accustomed to practical, applied forms of learning. Such an orientation was often part of participants' motivation for having pursued a vocational *carrera* and joining the MMFD. Despite in most cases continuing to study vocational subjects in HE, the pandemic resulted in a loss of the applied education most had been expecting to receive, negatively impacting participants' sense of academic progress:

It would be great if we could go to the laboratories every day to, to operate the machines […] it would extend my knowledge and I would acquire more knowledge.

(Atziri W3)

It really was…serious to be honest, because I lost a lot of practice […] I was already that type of person, they explained things online and well…I wouldn't understand.

(Raúl W3)

Robust research on vocational learners' experiences of online learning is scarce, but non-traditional and low-income students have been found to particularly struggle with transitions to distance learning in higher education (Safford and Stinton, 2016). Equally, tutors in Mexican technological universities have highlighted how their own personal struggles with pandemic conditions have negatively impacted their teaching practice (Vital-López et al., 2022). For Raúl, this pedagogical deficit contributed to his decision to suspend his degree and work full time in industry – a choice reflected in the 320,000 students estimated to have exited HE in Mexico due to the pandemic (Animal Político, 2020; Schmelkes, 2020). Roberto identified the shortcomings of online learning as a further disincentive to entering HE (in addition to his serious economic barriers discussed in chapter seven). For Carlos, the efforts he had been through to secure a highly prestigious scholarship at an elite university left him feeling somewhat under-fulfilled by remote learning:

It's not the same to be studying like that in your house […] it's not that it doesn't interest me […] but perhaps you feel that you learn more […] doing the physical things. Instead of through a videocall.

(Roberto W3)

> *I think that's the most attractive thing about…well, having the scholarship that I do […] I'm studying in a big university and well it doesn't feel the same […] seeing all my stuff around me, then seeing all the potential that the university has in its classrooms.*
>
> (Carlos W3)

In addition to the various learning costs produced by online HE learning models, graduates also faced a number of socio-emotional costs. Participants did not experience the expected socialisation and induction processes that typically take place upon entering HE. It was challenging to build new social connections and forge a sense of belonging to their new social spheres:

> *I would like to be in the classroom with my classmates […] I only see them on the computer. Like…I think, I think it's a nice experience to be […] in a new university, with new friends, new teachers, new, like, facilities.*
>
> (Alma W2)

> *I practically don't spend time with my classmates […] it's very different to be, be on a screen than being [there] physically, talking and making little jokes.*
>
> (David W3)

Participants described how this contributed to a sense of isolation and monotony, as the scope of their lives shrank to a very limited range of contacts and activities: *It's very, very heavy, well, being sat down all day, all without talking to, to classmates* (Adriana W3); *It's always the same, I mean, classes, finish, classes, finish, it does have a big impact* (David W2). Issues of stress, anxiety and mental ill health have been found to be widespread among students pursuing higher education during the pandemic (Contreras et al., 2021; Salas-Pilco et al., 2022; Zapata-Garibay et al., 2021), pointing to a need for novel student support mechanisms.

For some participants, a return to some face-to-face teaching by wave three was very challenging to their mental well-being. Having integrated radical adjustments to their ways of life during strictest lockdown, the resumption of daily activities and mass social contact was a jarring and disorienting experience:

> *[I'm in] physiological treatment […] there was a term when I had anxiety [laughs] attacks for like two weeks […] the pandemic didn't help me […] when I came back to classes […] I struggled a lot because I felt bad, sometimes I felt nauseous [..] I wasn't accustomed to being in places with a lot of people.*
>
> (Blanca W3)

Despite these many challenges, both in terms of learning and well-being, there were some flexibilities introduced by remote HE that were beneficial for young people's trajectories.

Particularly for poorer participants who relied on paid work to fund their tuition costs, online classes gave them greater possibilities to find and maintain employment. This allowed them to maintain a pragmatic of HE-prioritisation which might have been superseded by one of economic survival had online HE timetables not been in place. However, this did not erase the significant time pressures of combining work and study: *It's very heavy […] I have all my classes online. That's what allows me to, like, more or less stabilise myself [with work] sometimes. But yeah, I don't sleep* (Enrique W3). Online classes also helped to reduce time and financial resources usually spent on travelling to and from university, or relocating (Contreras et al., 2021; Salas-Pilco et al., 2022).

> *Recently I've had a lot of economic problems […] the fact that I'm not spending on transport, […] it's a bonus, right? Of the pandemic […] also there's no…no transition time.*
>
> (Rosa W2)

> *I'm here in Torreón, studying in the [name of university in different city] campus online […] I have a bit more time and…I can already establish a bit more of how I'm going to move there […] so you could say, in inverted commas, that I've gained something thanks to Covid.*
>
> (Carlos W3)

Some graduates even suggested that, alongside the many learning costs previously outlined, they had benefitted from greater flexibility and autonomy in online higher education: *It's been helping me a lot in terms of learning autonomously […] having this time to [..] reinforce the knowledge that we've already seen or to read an article on what we're talking about* (Rosa W2). Indeed, online HE delivery models have been found to improve students' capacity for self-regulated learning (Salas-Pilco et al., 2022).

Despite these benefits, participants' experience of pandemic-era HE was predominantly negative. Learning and well-being deficits were substantial, with graduates periodically struggling to maintain engagement, academic progress, and desire for continuity. The significant forms of distress and mental ill health experienced by HE students, particularly women, during the pandemic raises concerns about longer term impacts on the life course (Schmits et al., 2021). Furthermore, tracing the HE transitions of MMFD graduates reveals ways in which the Covid pandemic has contributed to widening inequalities in a sector already defined by socio-economic disparity (Schmelkes, 2020). Although policymakers hope that dual training will lead to employment over further study, the reality is that the majority of CONALEP graduates (dual or otherwise) continue to university (SEP & CONALEP, 2019). For dual students, this pathway appears even more common, and interview data demonstrate the strength of a HE-prioritisation pragmatic among dual graduates. Given the socio-economic vulnerabilities of many MMFD graduates, greater attention to how dual-to-HE transitions unfold, both in and out of times of crisis, could help in developing more coherent forms of transition

support, and thus, helping to reinforce and preserve the educational and professional gains made during MMFD training.

8.3.3. Personal and family life in the pandemic

In addition to the impacts on education and work, participants experienced a number of important impacts on their personal and family lives as a result of the pandemic, which influenced their trajectories. Most obviously, the health effects of the pandemic were significant: by July 2022, there had been over 6 million cases in Mexico and more than 325,00 deaths (BBC, 2022). Illness and bereavement due to covid were thus important events in participants' lives:

> *My dad […] he did have Covid […] he did have an oxygen tank and he had, I mean, it was a bit complicated.*
>
> (Rafael W3)

> *An uncle [of mine] […] he had heart problems that had been aggravated by [...] Covid, so my uncle died. [...] in my family, it did have a bit of an impact. With school, online, I don't function [laughs], I get distracted very easily.*
>
> (Blanca W3)

In addition to the direct health consequences of Covid-19 itself, there were secondary consequences for young people's physical health resulting from lockdown restrictions:

> *Because of the pandemic there have been situations where I can't [improve my physical health] […] the university has its own gym which would have allowed me to go and…keep myself in good health, there are also…areas where they tell you how to eat well.*
>
> (Carlos W3)

> *The last time we spoke, I already had an eating disorder, like, but I was still working. […] being locked up […] I wasn't realising the damage I was doing to my body.*
>
> (Erika W3)

Research has suggested that the secondary health consequences of lockdown measures were varied and substantial, with the possibility of lasting impacts on the life course, especially of young people (Branquinho et al., 2022; Viner et al., 2021). More specifically, measures of physical activity and people's relationship to food, including incidence of eating disorders, have notably worsened in a variety of international studies (Lin et al., 2021; Miniati et al., 2021; Zipfel et al., 2022). The logic of fundamental cause theory (Phelan and Link, 2013) suggests that, particularly as the pandemic continued and greater information was developed about the disease, the relatively low socio-

economic status of study participants would leave them more exposed to negative health consequences of Covid-19 and lockdown measures, exacerbated by the pre-existence of unequally distributed risk factors and inequalities in accessing and mobilising health protecting measures. Equally, however, the relatively swift universal provision of free and effective vaccinations in Mexico will have likely weakened this interrelation, notwithstanding important reductions in vaccine effectiveness for people with diabetes – itself a highly prevalent and socially stratified set of diseases in Mexico (Arredondo and Reyes, 2013; Bello-Chavolla et al., 2023).

One factor which further exacerbated the observed health effects was the loss of social and interpersonal contact produced by lockdown measures. In Mexico, restrictions for public services such as education were severe and long-lasting, meaning that most participants spent the entirety of the study period engaging in minimal social interaction outside their households:

> *I stopped doing lots of things that I liked […] spending time with friends or time outside, well, I had to be in the house […] it's still the same so far, this disease is not going to go away.*
>
> (Alma W3)

> *Although WhatsApp exists, although Facebook exists, although lots of means of communication exist now, it's not the same as being with someone in person.*
>
> (Javier W3)

The cumulative impact of social and physical deprivation was detrimental to some participants' mental health. Young women in particular reported increased occurrence of stress, anxiety, and depression as result of the pandemic and associated restrictions. This echoes research which has found that women in Mexico have been disproportionately impacted by the mental health stressors of remote learning and social isolation during the pandemic (Zapata-Garibay et al., 2021):

> *When I went into a panic because of the pandemic […] I didn't go out anywhere […] being in my house, and well, doing nothing […] I fell more into my depression […] that's why I'm going to therapy.*
>
> (Adriana W3)

> *There were weeks of…of sadness because well, seeing everything that was happening in the world […] it was a horrible shock for me when my parents said to me [to be prepared for] if they couldn't give me my university [education] or if they died of Covid.*
>
> (Erika W2)

Such mental health effects disrupted participants' ability to study, especially remotely, and handle the pressures of daily life. Adriana was fortunate that her accounting job provided the funds to pay

for therapy, but was nonetheless clear that the effects of this period of crisis would be carried with her for some time:

> *I think the only impact of the pandemic that I could continue experiencing is depression and anxiety [laugh], but well, I hope day I will get out of this […] my psychologist says […] it is quite intense.*
>
> (Adriana W3)

Although no participant in the study lost a member of their immediate household during the study, many had to reckon with the fact that if something did happen to their parent(s), they would take on substantial new economic responsibilities and positions of leadership in the household. The immediate threats of the pandemic brought home the significance of this possibility and, as in Enrique's case as the eldest male child pursuing a pragmatic of masculine mobility, influenced decision-making:

> *I started thinking at one moment about leaving my studies, working for a year and saving money, then going back to studying, but my parents said no […] they wanted to secure my future, because they feel that one day something could happen to them […] I think it's been amplified with all this of the pandemic.*
>
> (Enrique W3)

The economic effects of the pandemic often had profound consequences for graduates' family finances, and thus their transitions. Lay-offs, reductions in working hours, and increased prices combined to place especially the poorest households under extreme pressure (Schmelkes, 2020). As participants graduated from the MMFD and aged into legal majority, their contribution to the household sometimes became an economic necessity to make up for the new shortfalls. Rosa had managed to secure a competitive performance-dependent scholarship to support her Veterinary Sciences degree. She was interested, engaged, and performing well in her studies, which she had always been adamant were a priority. Nonetheless, once economic conditions worsened and her sister became unable to work due to illness, Rosa's previous pragmatic of HE-prioritisation was superseded by one of economic survival, and she ended her studies to take up work on the assembly line of a local factory:

> *I had good grades, I had an academic scholarship […] but it wasn't enough, like, for the family […] we don't have the resources for [me]…to carry on with the years [of university] I had left […] it was also stressful to be listening [to] […] 'we need this, we need that' here at home while I was in class […] I felt like I was being kept and I didn't like that.*
>
> (Rosa W3)

Rosa felt positive that she had her technical education to fall back on and she was hoping that her employer would move her to a technician's post after six months in the role. However, the experiences of her peers suggest that this was not a promise likely to be delivered, and accessing such a post would be especially challenging as a woman (see chapter seven).

Blanca's family had similarly struggled in the pandemic as work hours, and incomes, were reduced. As a result, while still pursuing a pragmatic of HE-prioritisation, Blanca attempted to maintain her 35 hour a week job in a cybercafé alongside her degree in order to contribute to the household. This left her facing extreme time poverty and struggling to successfully engage with her university work. At breaking point, she persisted with the pragmatic of HE-prioritisation, quitting her job in order to focus on her degree. This had knock-on consequences for household finances: *[Our household income] did reduce […] [and] there wasn't an income on my part [...] it became a bit difficult when I asked for materials [for university]* (Blanca W3). Shortly afterwards, Blanca also left her degree programme, reserving the option to return in the future. Having dealt with mental health difficulties upon returning to face-to-face teaching, she reported that social relationships with classmates had come under strain. In our wave three interview just one day after confirming her HE departure, Blanca no longer had a clear pathway in front of her, beyond fragmented informal work as a childminder and in the cybercafé.

Other young women in the study that had trained in industrial *carreras* and came from low-income households reported similarly significant disruption of their plans during the pandemic. Already contending with the influence of multiple subjective grammars on their transitions, the Covid pandemic had a compounding effect, overriding many of the intended effects of MMFD training on transition outcomes. Similar narratives of HE exit due to family financial pressures became common across Mexico during the pandemic (Schmelkes, 2020) and evidence from India suggests that women faced disproportionate disruption to their post-dual transitions triggered by Covid (Maitra and Maitra, 2021; Vanderhoven et al., 2024).

Furthermore, the quality and security of parental employment was tested and became decisive for participants' pathways in crisis conditions. As an example, Rafael's father had a formal job in a large company that took measures to protect its staff at the height of the pandemic. As a result, even though his father became quite unwell with Covid and required several weeks off work, he was sent home with full pay, and Rafael's pragmatic of HE-prioritisation was preserved. By contrast, Rosa's older parents faced age discrimination, moving from job to job, and her sister had to leave an insecure factory post following a Covid outbreak. Rosa's own plans and ambitions were derailed as a result as she adopted a pragmatic of economic survival. For the majority of Mexicans who do not

have such protected employment (ILO, 2023; INEGI, 2024), and whose children are far more likely to be pursuing a technical education, the pandemic poses a different set of risks to their lives and livelihoods: *The majority of families…well…now that [are] conventional, they are suffer-, we are suffering this type of problem* (Rosa W3).

This class-based variance in vulnerability to crisis was less pronounced for participants graduating from the accounting *carrera*. Given the stronger economic performance of this sector through the pandemic, and the resultant high rates of quality employment among accounting graduates, their own relatively healthy incomes were protective of a HE-prioritisation pragmatic, and the relevance of their work activities both alleviated the time pressures of combining work and study and supported simultaneous pursuit of a vocational prioritisation pragmatic.

8.4. Concluding comments

Participants' experiences suggest that when MMFD training corresponds to a well-performing sector which is willing to appoint young graduates to intermediate-level positions, it can be quite successful in producing positive employment and educational outcomes that correspond to diverse young people's aspirations (López-Fogués et al., 2018). However, crisis or contraction in the relevant sector (as produced in the industrial sector by Covid) significantly undermines the achievement of these outcomes (Wolter and Ryan, 2011). In these circumstances, only those most privileged by class and/or gender (most likely both) are able to take measures which may preserve the advantages afforded by their dual training, such as adopting a pragmatic of waiting it out in HE – although this study cannot confirm whether such measures ultimately produce returns. Given the widespread prevalence of a pragmatic of HE-prioritisation, those that cannot afford to purely wait it out absorb the negative effects of the pandemic through accepting low-quality or non-relevant work. Those in the most restricted financial circumstances must forgo HE and adopt a pragmatic of economic survival that fragments their trajectories and likely scars their professional profiles for years to come (Bell and Blanchflower, 2011; ILO, 2022). As such, these data suggest that the touted crisis resilience of dVET policies is, at best, reproductive of entrenched social inequalities, and, at worst, spurious. Indeed, active intervention in labour markets to foster quality employment practices, generate jobs for young people, and reduce cyclical crisis would appear to be a necessary twin to dual training – if it is to achieve its desired effects (Avis et al., 2021; Bell and Blanchflower, 2011).

9. Findings: locational grammars

9.1. Introduction

In this chapter, I explore the relevance of socio-spatial contexts for the development of young people's transitions through and beyond the Modelo Mexicano de Formación Dual (MMFD). These *locational grammars* are facets of youth experience that emerge from the multi-scalar geo-political and spatio-relational influences that intersect in the biography formation of people sharing the same location (Alexander, 2023; Kintrea et al., 2015). At the most obvious level, living within a given nation-state influences the feasibility and desirability of different trajectories, shaped by the distinct national institutional, cultural, and policy environment. At a more granular level, regions, localities, neighbourhoods, and communities all present different obstacles and opportunities to their young inhabitants, which shape their paths to adulthood (Kintrea et al., 2015). Equally, processes of globalisation ensure that macro-economic, political, and environmental change have some relevance for all young people's lives, whether or not they appear well-connected to transnational mobilities of different kinds (Jeffrey, 2010).

In proposing the relevance of locational grammars, I am not advocating for a temporally or interpersonally 'flat' conception of spatialised experience. Evidently, the socio-spatial character of places is highly time-dependent, and the boundary between temporal and locational grammars is blurry. Nonetheless, there is a certain 'stickiness' and path dependency to the gradual evolution of locational influences on youth that warrant distinct attention from the shorter-term and more volatile interjections I call temporal grammars (considering, for example, the distinction between biographical, generational, and historical time advanced by Neale et al., 2012: 5). Equally, subjective grammars are intertwined with locational grammars, such that young people's experiences of occupying and navigating various spatio-relational contexts are imbued with their broader social positions and identities (Alexander, 2023). As shown in chapter seven, gender and class produce significant divergences in participants' experiences whilst living in the same regions and communities.

Despite these overlaps, there were important and distinct facets of participants' experiences of the MMFD and their later transitions which emanated from their shared locational context (Fuller and Unwin, 2011). Three such grammars are explored in this chapter. Firstly, the educational ecosystem in which young people were embedded, both in terms of the institutional structures available to them and the surrounding cultural norms regarding education. Secondly, the locational influences

on collective youth voice and action, and their consequences for training experiences and youth transitions. Finally, the relevance of urban Coahuila as a nexus site for Mexico's evolving place in the global political economy and the influence of a neoliberal turn in Mexican politics and society.

9.2. Educational ecosystem

The nature and content of the local educational ecosystem had important effects on young people's arrival in MMFD programmes. As discussed in chapter seven, young people faced a limited menu of educational options in their transition to upper secondary education based on the unequal distribution of urban resources (i.e., schools) (Garnica-Monroy and Alvanides, 2019; Howell, 2018). Given participants' limited financial means, they were not able to extend their geographical, and thus educational, reach through transportation or relocation (Pantea, 2020). Schools that did fall within their accessible orbits were those that cater to low-income populations and correspond to lower-status transition pathways (Larentes da Silva, 2022; Villa Lever, 2007).

Once enrolled in CONALEP, funding and resource pressures within public education generated substantial shortcomings in the pedagogical quality and relevance of technical education. Participants, particularly industrial sector students, reported large class sizes, insufficient practice materials, technological failures, and safety hazards as impediments to their learning in the school-based modality:

> *Here on campus, they have very little equipment and there's lots of students in the classroom. So, it's not possible for there to be one person per machine […] five to ten students are on a piece of apparatus.*
>
> (Atziri W1)

> *Sometimes a connection fails or it's open […] you see cables and all that, at the end of the day it's dangerous […] I think it [the workshop] lacks…safety.*
>
> (Rosa W1)

> *You don't concentrate 100% and you don't pay attention. Any little thing distracts you and being with 60 people and reading the same thing, well, it was a lot of distraction.*
>
> (Erika W1)

For many students, these inadequacies in the on-campus learning environment contributed to their interest in MMFD programmes. As such, the opportunity to leverage the highly-resourced and up-to-date vocational learning environments of private companies was attractive, and beneficial, to dual students: *I've learned a lot of things, most of all now I'm in industry, things that perhaps I didn't*

see here [on campus] because of a lack of equipment (Roberto W1). Participants even suggested that the quality of school-based teaching improved once enrolled in the MMFD, as they gained access to smaller and more focused learning environments: *[On Saturdays] it's just dual students […] the teachers are very good […] they're, like, just specialised with us. I mean, they're not the same teachers as here [in the school-based modality]* (Claudia W1). While beneficial for dual students, this raises equity concerns about the creation of a 'blue-collar aristocracy' among a small segment of vocational students, hollowing out the quality of broader TVET (Cervantes et al., 2021).

Despite substantial change ushered in with increasing democratisation, clientelism is still pervasive in Mexico; its education system being no exception. This disincentivises more profound investment in public goods such as education, instead diverting resources to conditional cash transfer programmes (such as the Benito Juárez scholarship) which both alleviate immediate poverty and foster political support among poor voters (Diaz-Cayeros et al., 2016; Roldán Vera and Robles Valle, 2020). Furthermore, the nonetheless substantial resources which *are* allocated to public education are often used ineffectively and inefficiently, contributing to a middle-class exodus to private education which has further undermined system quality (Scott et al., 2018). As a result, public schools across Mexico face significant resource challenges and regularly rely on community fundraising and voluntary enrolment fees to deliver core services. It is nonetheless notable that such resource and quality issues were so apparent in Coahuila, a comparatively wealthy state which has historically benefited from greater public investment and political patronage (Diaz-Cayeros et al., 2016; Morán and Nevárez, 2021; Scott et al., 2018). This suggests that quality issues in school-based vocational education as a driver of students' entry to MMFD programmes may be even more pressing or pronounced in other regions of the country.

As discussed in chapters seven and eight, when considering their plans for post-MMFD transition, participants were heavily enmeshed in a widespread cultural valorisation of higher education as the pathway to a decent and respectable life, which produced a strong and widespread pragmatic of HE-prioritisation. Three quarters of parents of CONALEP students in the north of Mexico expressed a desire for their children to complete higher education – the highest rate in the country (SEP & CONALEP, 2019: 19). Against this backdrop, evidence from Saltillo and Torreón, two northern urban centres, suggests that the programme struggled to imprint upon its graduates an interest in direct transition to employment. Indeed, exposure to tertiary-educated colleagues in the workplace appears to have further reinforced HE-prioritisation, in opposition to the hopes of policymakers:

> *Being in a firm also gives you, like, that [thing] of continuing to study, because everyone there already has their carrera [degree], they have a profession […] I also want to learn, I also want*

to have a better job, and the firm even tells us […] 'you should keep studying' because for a good job, for sure they're going to ask […] for you to have a bachelor's degree.

(Claudia W3)

[I've wanted to enter HE] since I was little […] my parents gave me this idea, that you're not going to stop at prepa […] I've always aspired to…get an engineering degree.

(Erika W1)

I would like to be an engineer, have a profession, something higher than what I've finished [i.e. the MMFD] […] to have a better life.

(Roberto W2)

Given the MMFD's orientation to preparation for work, rather than study, graduates sometimes felt that they were not sufficiently prepared for the generalist academic exams required for university entrance. This included well-rounded theoretical knowledge of their *carrera* that extended beyond firm-specific skill demands:

Now that university is getting nearer and there have been exams, well, things that aren't a problem for school-based students or things that they saw…for a long time, well, we only [covered those areas] for two or three hours, and, well, it requires a bit more study.

(Carlos W1)

As we're [in] dual training, we only do core subjects, and it's assumed that we see everything to do with the specialism in the firm, but sometimes, well…in the firm, you hardly ever see such and such a subject.

(Erika W2)

Successful HE entry was in fact common among dual and school-based CONALEP graduates, supported by a local HE offer comprising several reasonable-quality and accessibly-priced public and technological universities (not so in other Mexican states and rural areas; Hernández-Fernández et al., 2021; Howell, 2018; Sánchez-Soto and Bautista León, 2020). The exposure to real-world work environments provided by dual training appeared to help MMFD graduates be more realistic, informed, and certain about their higher education choices:

I've heard […] comments that [school-based students] are studying in university, but in the end they don't like it […] because they never really saw it, I mean, they only saw pure theory, but it's really different when you practice it […] it helps you to define whether it's what you like or what you don't like.

(Claudia W2)

Raúl provided an interesting example of when the strong cultural propensity for HE in the local education ecosystem came into tension with dual students' preference for vocational and applied learning. Raúl had a strong vocational habitus (Colley et al., 2003); he had been inculcated with work-oriented values from a young age, was drawn to the MMFD on this basis, and had thrived in the dual training environment. However, pandemic conditions, combined with an enduring sense that HE was the route to better quality employment, led Raúl to pursue a pragmatic of HE-prioritisation. In university, he struggled with remote learning, finding study difficult and unmotivating without real-world application. By wave three, he had suspended his engineering degree to take a full-time technician job in a local factory, switching to a pragmatic of vocational prioritisation. The relief he felt at re-entering an environment that was congruent with his vocational orientation was palpable:

> *[The thing] is that I love it [laughs], the honest truth, I love working more [smiling] than, than studying. Like, since I was little I taught myself to do that […] but well…I also have to study for the same reason, to have a good job.*
>
> (Raúl W3)

Raúl was thus in something of a bind: to access the kind of higher-skill industrial work that he found engaging, he was aware that he would likely require an engineering degree; yet it was precisely his propensity for practical application that had made his degree studies untenable. It was perhaps fortunate that he had completed dual training over a school-based diploma, given his ultimate success in securing a technician's position. Nonetheless, his future progression in the industry was not assured and he still felt considerable pressure to return to his studies for instrumental reasons. Indeed, several graduates suggested that, given expanding HE graduation rates, a master's degree would be needed to compete in the labour market. Whether this perception is accurate, or this aspiration easily realisable in a state where roughly 17% of people hold a bachelor's degree and only 1.5% hold a master's degree (Data-México, 2023), the expanding drive for educational advancement was felt strongly by participants:

> *The world is advancing and, for example, before people didn't study, right? Before they didn't even finish primary, after a few years they finished prepa, and then, right now […] loads and loads of people are studying [in university]. So, I would like to have something extra [in terms] of, of studies.*
>
> (Enrique W3)

Holding Raúl's example together with that of students who maintained a pragmatic of HE-prioritisation but did not feel optimally prepared for this route by dual training, it is possible to see how greater attention to the prevailing educational context might generate MMFD policy features

that better support fruitful and motivating trajectories for graduates. Given a very widespread desire to complete tertiary education – true across Mexico, but notably pronounced among CONALEP students in the north (SEP & CONALEP, 2019) – greater attention to general and theoretical skill development within MMFD programmes in this region might better support graduates' inevitable HE transitions, and, indeed, their future careers in a labour market characterised by high labour rotation (especially for women, see Estévez-Abe, 2005). Equally, recognising the substantial cultural pressure towards higher education means that supporting those students who do have a preference and predisposition for direct labour market insertion requires more than simple workplace exposure: careers advice which makes transparent employment pathways that do not depend on HE completion (assuming these do exist); post-graduation industry mentorship programmes; and robust transition support (e.g. interview preparation, CV surgeries, networking events) could help work-oriented students to secure a job of sufficient quality as to diminish the pressure to study and instead foster a pragmatic of vocational prioritisation. Many of these activities could be generated through the systemic involvement of dual graduates (Vanderhoven et al., 2023). Such interventions might even go some way to producing (a very modest version of) the youth employment outcomes desired by state policymakers.

9.3. Youth collectivism

Within the DACH dual systems, tripartite governance arrangements involving robust and consensus-seeking dialogue between the state, employers, and organised labour are foundational (Langthaler and Top, 2023; Valiente and Scandurra, 2017). Such social dialogue has developed out of the specific institutional and socio-political histories of these social market economies. By contrast, Mexico's post-revolutionary period saw the designation of official trade unions which operated in clientelist tandem with the authoritarian Institutional Revolutionary Party (PRI) during its 71-year hegemonic rule (Teichman, 1996; Zepeda, 2021). The neoliberal turn of recent decades has seen this shift to a more disarticulated and fragmented landscape including a stronger role for private capital and increasing tensions between the state and progressively side-lined trade unions (Morton, 2003; Teichman, 1996; Zepeda, 2021). In northern border states specifically, the suppression of independent union activity has been particularly stark in maquiladora industries (Cooney, 2001; Moreno-Brid et al., 2021; see section 9.4).

At the time of the MMFD's establishment in 2013 – also the moment of the PRI's first return to presidential power since the democratic transition at the turn of the century – the policy was pursued without making alterations to the 1931 Federal Labour Law which had established that historic relationship between the state and organised labour. Attempting to alter the law was seen

as a political dead end that would produce an antagonistic impasse with trade unions (Cervantes et al., 2021). Instead, the intervention was framed as entirely educational in nature, with dual trainees recognised as students under the care of schools, rather than workers or formal apprentices (SEMS, 2022), allowing engagement with trade unions to be bypassed. While this carried the obvious advantage of making the MMFD possible to implement, it also meant that the tripartite approach was quietly discarded in favour of a system led primarily by the state in dialogue with employers and their representatives (Vanderhoven et al., 2022). As a result, dual students were not afforded any formal or organised role in the governance of the MMFD and would not be eligible for union membership.

The impacts of this bipartite governance structure were evident in participants' training experiences. Dual students encountered minimal opportunities to exercise choice or voice in their training pathways and had no means of acting or speaking collectively. This had a limiting effect on the degree of transitional agency that young people could exercise (Lehmann, 2005; 2012). As an example, participants reported that successful dual applicants were not offered any say in the choice of host firm. Indeed, young people's only means of employer selection was to reject an offered placement, understanding that this may amount to a wholesale rejection of their place in the MMFD. By contrast, both schools and firms applied rigorous selection processes that allowed them to choose trainees according to their own preferences and priorities:

> *I would like us to be able to choose the company in which we would like to work, I think it would count a lot if everyone could go to the company they wanted to work for.*
>
> (Roberto W1)

> *The thing is they don't tell us the firm that we're going to enter into. They don't tell us up until we get selected. […] they told me 'you're going to go to the firm, they will interview you', I went and I was selected for that one.*
>
> (Carlos W1)

As there is no representative body for youth/labour within the MMFD, individual students must act as intermediaries between CONALEP, employers, and employers' organisations, sharing information and concerns between the multiple parties with sometimes competing priorities: *The thing I would change is the way in which…the firm-CONALEP-student communication […] it was a game of broken telephone* (Erika W3). When issues would occur in the firm, it would be up to individual young people to speak up. This was sometimes approached in a solidaristic fashion, but the risks were carried by the individual: *As there were some challenges in the firm, well, it depended on us to take the initiative […] at various moments I did have to, to speak [up] for my course mates* (Carlos W1). Indeed, the systematic omission of student perspectives from governance and feedback structures

produced a reliance on individual reporting as the primary mechanism of quality assurance and prevented valuable improvement insights being generated from students' experiences:

> *There was communication but there wasn't enough […] If you didn't ask, if you didn't say, if you didn't raise your hand and say 'you know what? I'm not learning, maybe I'm not developing myself in this firm' […] if you want to see improvements in the dual [model], how will you get it? Well, by talking to the dual students themselves, saying 'you know what? This is missing or that is missing'.*
>
> (Javier W2)

For instance, participants were almost universal in suggesting that both hours of general theoretical education and financial support should be increased (López-Fogués et al., 2018). However, they had no access to a collective mechanism through which they could advocate and apply pressure for these changes. Arguably, this stifling of student agency within MMFD policy structures contributed to the widespread adoption of a waiting it out pragmatic in pandemic conditions (see section 8.2.2), as young people were accustomed to deferring to schools and employers in all matters (Diaz-Loving and del Castillo, 2010).

In the bipartite system of governance, responsibility for dual students' rights education fell to CONALEP, individual firms and/or intermediaries COPARMEX and CANACINTRA, each operating according to their own organisational interests as much as those of students. Potentially as a result of those competing priorities, students' rights training was often weak and/or inconsistent (Lehmann, 2005; 2012):[30]

> *I: Did the company talk to you about labour laws or your rights as an apprentice?*
> *P: Not at all, to tell you the truth [...] What they do talk about is more for the other employees […] and since I am half employee and half student, they consider me more as...a student.*
>
> (Marco W1)

There was also evidence that some host firms were either not aware of or not willing to respect certain training conditions which were meant to be protected for dual students, including the right to be excused from workplace activities to participate in off-the-job educational activities at CONALEP:

> *The thing is the firm gives us very, very few possibilities like that. We don't have so many privileges, so let's say I were to miss [work] tomorrow, I have to go and make that up on another shift or the next day.*
>
> (Atziri W1)

[30] See chapter ten for specific discussion of shortcomings in training related to sexual harassment.

On a Friday I had to go to the school for enrolment, I told the accountant that I was going to arrive 30 minutes late and when I arrived at the firm […] the woman from human resources told me that they didn't need my, my services there anymore, and that same day they changed me to another firm.

(David W1)

As an extension of this, participants' experiences suggested that firms did not always promulgate a sound and positive understanding of dual trainees' status among their workforces. As discussed in chapter seven, this sometimes led to poor treatment from employees and workplace mentors:

In my firm, there's a bit of a bad concept of us, because of…our difference in terms of responsibilities, because although we have more responsibilities, we're not completely workers […] [There is] a bad view on their part towards us.

(Carlos W1)

The manager […] said I didn't do anything, that I was a lazy idiot, and all I did was waste the engineers' time […] I don't like the way he treated me at all.

(Enrique W1)

Despite the lack of trade union involvement, there were important efforts to replicate some of the governance features considered key to maintaining quality and dignity for dual trainees (Langthaler and Top, 2023; Valiente and Scandurra, 2017). For example, formal agreements (*convenios*; requirement by federal agreement) were signed between CONALEP, host firms, students, and parents, stipulating basic rights and responsibilities of the involved parties (DOF, 2015; see section 1.3). For students, these included maximum working hours, prohibitions on night and weekend work, stipulations on exposure to theoretical learning in the workplace, the provision of insurance, and (at the discretion of individual employers) material support such as free lunch and/or transport. Furthermore, dual trainees' continuing status as 'students' provided some recourse to a normative ideal of their 'right to learn'. Both of these mechanisms could be used by participants to defend certain facets of learning and training quality:

They always emphasise to us that even if we are in a company, we are still in dual training. I mean, because many companies forget that […] the right to respect […] we are here to learn more than anything.

(Claudia W1)

Before entering the company, they get us to sign an agreement of understanding. So, there they give you your insurance, the things you should see in the firm, the things you can demand, the things they can also demand of you. So yeah, I think they do give you a certain, well, they impart the rights that you should receive.

(Armando W1)

However, without the involvement of trade unions or an equivalent collective body, the means of enforcing these conditions were not always clear. Although it would primarily fall to CONALEP staff to negotiate with employers if conditions contravened the expected standards, this sat in tension with schools' parallel requirement to secure a growing number of placement spaces in local businesses. As such, trainees' working conditions can become compromised by the pursuit of harmonious school-employer relations (Lehmann, 2005; 2012). Equally, CONALEP's involvement would only be precipitated if individual students raised concerns. Therefore, in reality, the *convenio* and 'right to learn' concept were predominantly useful to the limited number of students who were willing or able to use them as part of a direct appeal to their individual host firm in a pragmatic of self-advocacy (such as Erika below). However, as Enrique's case demonstrates, many students were not confident in doing so and instead adopted a pragmatic of conflict avoidance, not least because contesting their current placement might endanger their continuation in the MMFD:

> *They never really gave me any formal training [in the workplace] […] until I demanded it, until I said 'I want to go back and read my agreement, because they are skipping…points…[…] that they should be respecting'. […] So, I went back and read my agreements and signalled with my highlighter and I told them 'here it is, I have to learn and I have to have formal training'.*
>
> (Erika W1)

> *I feel like…if I say something to CONALEP [about my bad experience] there will be tension […] I think the first thing they would do, from what I have seen, is they would go to the firm and they would say […] 'why are you treating this student [like this]?' […] if the company doesn't understand, they take me out […] they look for another firm and if they don't find one then I decide whether I stay or not.*
>
> (Enrique W1)

Indeed, there were several examples of participants training under conditions that contravened their agreements, but which students did not recognise as problematic or did not to report to CONALEP. This pragmatic of conflict avoidance may be informed by an important cultural valorisation of affiliative obedience, which prioritises collective harmony and respect of hierarchies (Diaz-Loving and del Castillo, 2010).

Among participants, training quality appeared to be highly dependent on the capacities and motivations of individual firms, some of whom displayed exploitative practices and many of whom provided highly firm-specific learning experiences (Esmond, 2018):

> *The companies see us as interns [...] they say that we are a government benefit, so they can do whatever they want with us [...] because we do it for very little money. So, they can take advantage of us.*
>
> (Enrique W1)

Two course mates […] went to a different firm […] they didn't put them in accountancy, they had them doing things like 'do this, wash the car' and all that, things that had nothing to do with the company […] one of them left the dual model and the other went to a different firm.

(David W1)

The company realised I had potential, they said that, they would like to make me head of Quality [Control] […] I'm not [an employee] because there is no contract […] they give me 400 pesos [approx. 40USD PPP] a week.

(Erika W1)

The problem here is that companies, even though they have…the…the guide that CONALEP gives [stipulating rotation plan etc.], well, companies are also looking to take advantage of this, so, we're more at the service of the needs of the company than [at the service] of our knowledge.

(Carlos W1)

As Gessler (2019: 9) highlights, 'work and its environment do not automatically enhance learning and promote the development of self-, social, and professional competence'. Indeed, the work environment can easily offer very low learning potential unless the content, quality, and delivery of training activities are well planned and monitored. Furthermore, a reliance on incidental learning can compound inequalities (Esmond, 2018). Much of the responsibility for planning workplace learning appeared to be devolved to individual firms, with CONALEP stepping in in the case of serious breaches reported by students, but otherwise doing little to enforce or monitor training standards in the workplace. Those firms that were highly committed to values of professional development offered beneficial learning experiences to their dual trainees. Others, however, were more interested in the low-cost labour on offer. As a result, dual participants were subject to a firm lottery, where the quality, relevance, and lasting utility of their dual training was dependent on the firm they were placed in (Pilz and Wiemann, 2021) – a process, as discussed in section 9.2, over which they had little control. This lottery was overlain with additional risks for female trainees in the industrial sector who also had to contend with varying attitudes to women's participation in the industrial workforce (see chapter seven). Although all of the participants in this study graduated from the MMFD, there were indications that this firm lottery posed a threat to programme continuity for many students:

At the beginning we were like 10 [dual students in my firm] […] right now we're just…with me…like two […] The company sometimes...goes too far, it goes too far with the students. [...] […] they make them carry very heavy things without protection, or...or they just treat them badly. [...] and there comes a point when they can't take it anymore and they leave.

(Enrique W1)

> *I have course mates who, in fact, they already left [name of company] because sometimes they don't give them attention because there are too many of them, I mean, it's very complicated […] they have like 60 [students in the firm].*
>
> (Roberto W1)

Such negative experiences could also be further undermining the employment aims of the programme, as graduates become unwilling to stay on in their firms beyond completion: *[I wouldn't stay] in this firm no […] they treat people very badly and I don't know, the bad working environment they have here* (Enrique W1).

In essence, within the current bipartite governance arrangements, CONALEP holds the majority of responsibility for overseeing and enforcing training quality and students' rights in the workplace. However, schools must simultaneously maintain and expand placement numbers in order for the MMFD offer to grow, making harmonious and continuing relationships with a maximum number of firms a competing priority, seemingly resulting in accommodation of sub-optimal and/or exploitative practices (Lehmann, 2005; 2012). Furthermore, CONALEP staff are attempting to balance these competing responsibilities with very limited resources (see section 9.2). In this bipartite system, there is no counterbalancing actor that can prioritise student experience and which holds the freedom or motivation to challenge systemically unjust practices and demand more rigorous selection and oversight mechanisms. As has been suggested by Langthaler and Top (2023), a dual system without social dialogue and youth voice is therefore substantially, if not fatally, limited in its ability to deliver the purported human development outcomes of dual models, including decent work, improved quality of life, and social cohesion (Avis et al., 2021; Vanderhoven, 2023; see also chapter two).

Given the complex and long-standing socio-political context which produced the current bipartite compromise in Mexico, it would be naïve to suggest that any fundamental shift in state-labour and industrial relations should be sought in order to pursue a traditional tripartite dual structure for this very small-scale educational intervention. Nonetheless, some form of redress will need to be directed at the current representational deficit, if the broad human development aims of dual education are to be a realistic end product of the MMFD. This is particularly true as relates to training quality and decent work outcomes. There are nascent efforts in Mexico to build networks of dual students and graduates who could act as representative bodies, prioritising the student experience and acting collectively in defence of young people's rights (Vanderhoven et al., 2023; 2024). The process of conducting this doctoral research certainly demonstrates that dual students and graduates are keen to see their interests better represented and that they are very comfortable analysing their circumstances and proffering solutions:

The teachers do help you, but they were not very attentive to everyone. Checking that the company is doing what it should be doing and checking that the students are also doing what they should be doing, not losing time, I think these are factors they need to improve.

(David W3)

Nobody ever listens to people of my age […] this interview over the course of […] the end of my dual training until now […] gave me the opportunity to get to know things that I didn't know. Before the interviews I prepare myself and I say and analyse everything that happened before or after an interview and I realised the big changes I have [gone through].

(Erika W3)

As such, the prevalence of pragmatics of waiting it out and conflict avoidance is likely encouraged by policy features; young people appear willing to act in a diversity of proactive ways if given the support to do so. Nonetheless, building these kinds of connections from the ground up requires very significant time and resources. Indeed, the increasing occurrence of transferred dual systems that, as a result of variance in industrial histories, are not well placed to quickly implement a tripartite model of governance, raises questions about the ethics of an intervention which systematically omits the voice of youth/labour while bringing private actors ever closer into the fold of public education (Avis et al., 2021; Langthaler and Top, 2023; Larentes da Silva, 2022).

9.4. Neoliberalism and the global political economy

Throughout the 1970s and 80s, Mexico's place in the global political economy began to shift substantially. Precipitated by a combination of internal political pressures and external economic events and agreements (Teichman, 1996), the ruling PRI's historic strategy of import substitution industrialisation was gradually replaced with a neoliberal accumulation strategy that vastly expanded the maquiladora industry, particularly in northern border states such as Coahuila (Cooney, 2001; Otero, 1996). Indeed, this maquiladora model of industry has played an important role in servicing the nation's substantial foreign debts following successive crises and IMF bailouts (Cooney, 2001).

Mexico's international status as a site for low-cost export processing was further deepened with the establishment of the North American Free Trade Agreement in 1994 (recently replaced with the United States-Mexico-Canada Agreement in 2020), proliferating to 13 free trade agreements with 50 countries over the intervening decades (International Trade Administration, 2024). The National Chamber of Manufacturing Industries (CANACINTRA) and the Employer's Confederation of the Republic of Mexico (COPARMEX) – two powerful intermediaries in the establishment and governance of the MMFD in Coahuila – were critical actors in this neoliberal transformation

(Morton, 2003). Importantly, despite substantial privatisation and marketisation (Otero, 1996), the Mexican iteration of neoliberalism does not necessarily denote progressive erosion of state power or reach (Gouzoulis and Constantine, 2020). It does, however, signal a reorganisation of social and economic relations into a 'neo-corporatist' structure that favours a central core of elites and orients to transnational private capital (De la Garza Toledo et al., 2017; Morton, 2003). Furthermore, the *ideological* project of neoliberalism is not de facto undermined by its real world conciliation with competing political priorities, and an ideological orientation to individualism and consumerism has become ever more relevant to life in Mexico (Laurell, 2015; Morton, 2003).

It is against this backdrop that young people in Coahuila construct their personal and professional transitions. The local economy is heavily dependent on transnational investment and maquiladora manufacturing, reflected in the predominantly industrial *carreras* on offer in CONALEP schools. As demonstrated by the economic effects of the Covid-19 pandemic (see chapter eight), the region is particularly vulnerable to shocks in global value chains. Equally, however, Coahuila has some of the highest average wages and lowest rates of informality in the country (Data-México, 2023) and comparatively greater opportunities for social mobility (Delajara et al., 2022). The cultural and economic influence (and allure) of the United States is significant in this relatively prosperous border region (Otero, 1996). As such, MMFD students in Coahuila find themselves in a nexus site for wider Mexico's relationship with the global political economy, which is enmeshed within an ideological project of market liberalism, individual advancement, and aspirational consumption.

This was reflected in the narratives that participants advanced about the future course of their lives, and the very high aspirations for educational, professional, and economic advancement that they pursued. Despite the limited economic means and educational histories of most participants' families, there was a universal expectation that their own lives would be substantially 'better' than that of their parents, as a result of their efforts at self-improvement:

> *I believe as they say that 'wanting to is being able to', and I really have a vision of being able to be something, in the future […] and not going through what I am seeing in my family right now.*
>
> (Roberto W1)

> *I would like to aspire to more […] to keep advancing, and advancing, and advancing […] with much higher aspirations for the future.*
>
> (Armando W2)

> *[I will] continue fighting for, for the dream I have […] every day it's fighting to, to reach […] the peak of success […] but I know that when I get there I will have to keep fighting for more things, like, not stagnating, always keep improving myself.*
>
> (Rafael W3)

This was predicated on a strong belief that meritocracy would determine the distribution of opportunities and material outcomes in their lives (Laurell, 2015; Velez-Grajales et al., 2014), and that, as such, maintaining the correct attitude and degree of dedication and perseverance would ultimately result in the realisation of their high aspirations (Gooptu, 2009):

> *If I keep forcing myself and fighting, keeping myself strong, well I think there will very good possibilities [for me], I don't think there will be anything bad.*
>
> (Marco W2)

> *I feel I have enough, enough bravery, enough confidence to, to achieve anything that […] I mentalise, that I focus myself on. But I think that, giving it, like dedication, dedicating time to it, I believe that we can do what we want.*
>
> (Alma W3)

> *If I am [doing] well, it's because of the decisions I made.*
>
> (Rosa W3)

In exploring the aspirations of TVET students living in neoliberal contexts (in this case Chile), Aldinucci (2022) has argued that 'high' aspirations must be understood as a paradoxical product of prevailing social inequalities. Indeed, neoliberal discourses of meritocracy, self-improvement, and entrepreneurialism generate inflated aspirations as a rational, but not necessarily realisable, response to the rhetoric surrounding young people as they construct their transitions. In this context, and as reflected in the statements of participants above, high aspirations relate to 'the construction of individual self-worth, to the determination of escaping poverty and to individual plans for a life with dignity' (Aldinucci et al., 2021: 804). As such, the assumption of policymakers that young people will form their aspirations in a purely pragmatically-rational fashion (in the case of the MMFD in Coahuila; opting to directly enter intermediate skill employment upon graduation) underestimates the role of neoliberal norms in propelling young people's aspirations upwards, even as the associated economic structures widen inequality and present barriers to the realisation of those dreams (Aldinucci, 2022; Aldinucci et al., 2021; see also Kintrea et al., 2015). Furthermore, neoliberal rhetoric generates a *moral* propensity to ambitious aspirations, as young people see aiming high as the responsible and industrious choice in a context of purported meritocracy and as a virtuous means of lifting their families out of poverty (Aldinucci et al., 2021; see also Gooptu,

2009). Driven by these combined influences, a pragmatic of aspirational mobility was universal among study participants.

Given the gradual replacement of direct state interventionism with compensatory measures such as conditional cash transfers that has been typical of Mexico's structural change (Morton, 2003), as well as the steady increase in precarity and suppression of wages to attract foreign investment (Laurell, 2015; Gouzoulis and Constantine, 2020), participants were aware that their pathways towards their aspired lives were taking place in a context of minimal safety nets. For those coming from more financially stable households, their families offered some degree of support, but for many, they were aware that they were the family's hope for the future, and that they would need to attain their goals through their own means and efforts:

> *It's been an…important change, opening my eyes and seeing that, well, [my parents] won't always be here […] you have to do things yourself […] really accept that…I have to do things myself.*
>
> (Rosa W3)

> *I feel too in control of what I can do with my life and I feel a bit, a bit afraid. I mean for that same reason, If I happen to make a mistake in my pathway […] it can deviate a great deal […] everything falls to me, everything that will happen in the future for me and my family, well, it just depends on me.*
>
> (Enrique W3)

Participants described how their dual training cultivated these same skills of self-reliance and individual independence, preparing them for the self-management they would need to display in their onward employment trajectories (Gooptu, 2009):

> *In dual, like each person goes through the process alone and it's each person with their effort. So, we don't depend so much on other people; we have to solve our own problems.*
>
> (Blanca W1)

> *Everything falls to the student, and the instant that you're in the firm, [it falls] to [you as] the worker […] everything depends on you.*
>
> (Javier W3)

While this brought maturation benefits to young people, who felt they outstripped their school-based peers in terms of readiness for the real world of work, this also implied early inculcation with the values promulgated by host workplaces. Indeed, given the direct and individualised relationship between trainees and their host companies, participants emphasised the importance of displaying

the cooperative and amenable, if not compliant, disposition preferred by employers (Gooptu, 2013; Maitra and Maitra, 2021):

> *More than anything it's about the aptitude…of the student. If they [firms] see that you want to [….] cooperate, they will accept you […] they also see how you present yourself, how you behave.*
>
> (Javier W1)

> *Attitude is what counts a lot in the companies […] in the psychometric tests they give us they really emphasise that […] how keen you are to learn; how responsible the person is.*
>
> (Claudia W1)

> *Not everyone likes the company they are in […] a person who doesn't open doors and who keeps themselves closed, doesn't grow. If you're fixated on 'but they [the firm] haven't paid me, they haven't done this for me', it's like, ok, they haven't helped you learn this, but what about other things [they've done for you]?*
>
> (Erika W1)

Extensive research in Mexico's maquiladoras has shown that low wages, longer working weeks, underpaid overtime, and strict systems of shop floor control are pervasive, as transnational companies pursue minimal cost and maximum productivity from this 'processing zone' (Cooney, 2001; Taylor, 2010). This has been aided by the decline of official union power and active suppression of independent union activity (Cooney, 2001; Zepeda, 2021). As such, placing students directly and completely into these working environments for vocational training purposes and transforming employers into the arbiters of educational progress raises questions about what forms of learning are valued and rewarded within dual training (Avis et al., 2021). Indeed, apprenticeship programmes can be forums for a culture of 'paying one's dues' through unpleasant or exploitative tasks (Lehmann, 2005; 2012). The MMFD ostensibly serves as holistic preparation for professional life, but, in Coahuila at least, may instead be readying young people to accept the prevailing exploitative conditions of maquiladora labour by cultivating a pragmatic of exploitation tolerance.[31]

The influence of the maquiladora industry's labour norms may further explain the sectoral disparities in employment outcomes discussed in chapter eight and the gender inequities discussed in chapter seven. Accountancy students primarily based in small, local firms benefitted from continuing career progression in their companies, while industrial graduates placed predominantly in maquiladoras were offered low-paid (but not necessarily low skill; Cooney, 2001) assembly labour

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[31] Exploitation is here conceived of as completing tasks which are primarily of financial benefit to the firm and do not offer skill development benefits to trainees (Wolter and Ryan, 2011) e.g. engaging in menial or limited tasks on a repetitive basis.

despite their proven capacities for technical work. Maquiladora plants are further well known for their discriminatory and exploitative practices towards female workers (Cooney, 2001; Moreno-Brid et al., 2021; Taylor, 2010). As such, the heavy reliance that the MMFD places on the quality and nature of training offered by host firms (see section 9.3) makes it vulnerable to replication of the exploitative practices and inequalities found within Coahuila's predominant maquiladora industry. Furthermore, given the relative strength of union activity and work quality in Coahuila and in the automotive industry (which is especially dominant in the state) compared to other maquiladora sectors and centres (Cooney, 2001; Moreno-Brid et al., 2021), these findings suggest that the negative influence of maquiladora employment norms on MMFD training may be substantially stronger in other areas of the country.

There emerge, therefore, two principal ways in which Coahuila's status as a nexus site for Mexico's neoliberal transformation and integration into the global political economy influences the functioning and outcomes of the MMFD. Firstly, young people's aspirations cannot be easily moulded and determined by the provision of new educational pathways and careers information; given the intergenerational poverty of their families and the ubiquitousness of neoliberal discourses of meritocracy (Laurell, 2015), young people are predisposed to be guided by a pragmatic of aspirational mobility (Aldinucci, 2022). In Mexico, such aspirations equate to higher education and managerial employment. Therefore, as long as such meritocratic rhetoric remains uncontested, policymakers' stated aim of producing direct employment insertion will be consistently frustrated by young people's assertion of their agency through a pragmatic of HE-prioritisation. Secondly, the deliberate suppression of working conditions required for global competitiveness associated with maquiladora industries produces spillover effects for equity and quality in the MMFD. When students are placed in firms that prioritise extractive profit maximisation, and a heavy reliance on work-based learning (Pilz and Wiemann, 2021) is not counterbalanced with holistic off-the-job training, then students are likely to be vulnerable to impoverished learning experiences and inculcation with exploitative work norms (Avis et al., 2021; Esmond and Atkins, 2022), leading to a pragmatic of exploitation tolerance. This produces sectoral inequities between students in service and industrial *carreras*, the latter being more vulnerable to exploitative and discriminatory practices. As such, the human development goals of expansions to decent work, alleviation of poverty, and improved social cohesion are unlikely to materialise unless these outcomes are also actively fostered within the prevailing structures and culture of local employment (Langthaler and Top, 2023; Vanderhoven et al., 2022).

9.5. Concluding comments

There are thus a number of ways in which the influence of locational grammars sit in tension with MMFD policy features and aims. Policymakers hoped that graduates would pursue a pragmatic of vocational prioritisation towards immediate employment, but cultural valorisation of higher education led most to adopt one of HE-prioritisation. As such, more could be done to foster the prior and support the choices of those pursuing the latter. The systemic omission of collective youth voice encourages a pragmatic of conflict-avoidance and leaves quality issues unaddressed. By contrast, interviews reveal a latent pragmatic of self-advocacy that could be fostered through collective youth networks and feedback mechanisms (Vanderhoven et al., 2024). Finally, Mexico's prevailing neoliberal ideology encourages the connected pragmatics of aspirational mobility and HE-prioritisation, which run counter to the employment insertion aims of policymakers. Furthermore, the employment norms of Coahuila's maquiladora industry appear to undermine training quality and contribute to a pragmatic of exploitation tolerance among young people.

10. Discussion and conclusions

10.1. Introduction

This final chapter returns to discussion of the research objectives and questions detailed in section 5.3.2, namely:

RO1: To understand and explain the contextually embedded nature of youth transition processes for MMFD participants.

> **RQ1.** Which Grammars of Youth are most relevant to the transitions of MMFD participants in Coahuila, Mexico? Why and how do these grammars manifest? How and why do they develop over time?
>
> **RQ2.** What youth pragmatics do young people employ in navigating their youth transitions, including in relation to the identified grammars? How and why do these develop over time?
>
> **RQ3.** How do these grammars and youth pragmatics interact with MMFD policy features to impact youth transitions? How and why does this develop over time?

RO2: To identify means of improving the youth transition impacts of the MMFD.

> **RQ4.** In light of the grammatical context in which young people live, how might MMFD policy features be altered to make dual training more equitable and effective for young people in transition?

RO3: To contribute to global debates and understandings of apprenticeship/dVET policy transfer.

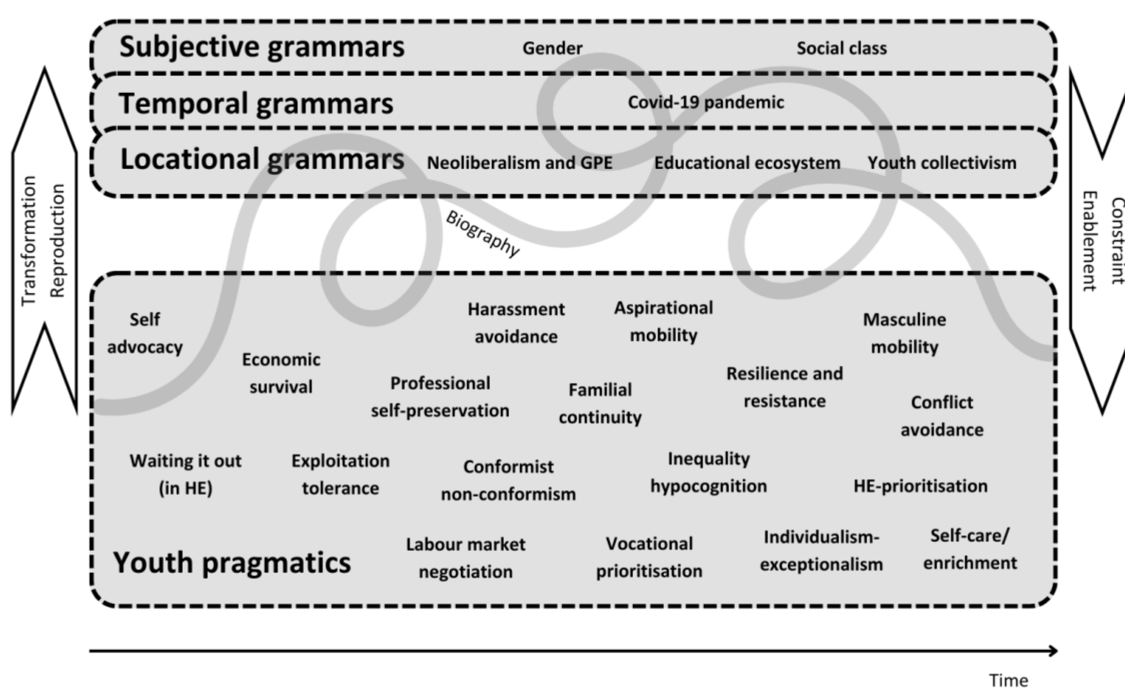
> **RQ5.** How do the transition experiences and outcomes of MMFD participants compare to those discursively depicted within the global apprenticeship agenda? To what extent do these contest or reinforce global policy norms about the effects of apprenticeships?

In the second section of this chapter, I address RQs 1 to 3, discussing the interplay of grammars and pragmatics in the youth transitions of participants and their interaction with MMFD policy features. In the third section, I address RQ4 and discuss what changes to MMFD policy might be conducive to more equitable and effective training experiences and outcomes for young people in Coahuila and broader Mexico. Finally, I address RQ5 and reinsert this local policy – the MMFD – into its global context as connected to the global apprenticeship agenda and international dVET policy transfer, reconsidering the reliability of global narratives about apprenticeship in light of the contextualised evidence generated through this doctoral research. I conclude by reflecting on the original

contribution of this thesis and by indicating onward avenues for inquiry and practice that might further enrich our understanding of dVET internationally.

10.2. The grammars and pragmatics of MMFD transitions

Having structured the findings chapters around the typology of grammars, this discussion pivots and enters a synthetic discussion of the findings through the frame of the identified youth pragmatics, which cut across overlapping grammars and help to reveal the temporally constituted relationships between the two levels of the analytical dualism (see Figure 5).



Source: Author's own elaboration from (Archer, 1995; Miranda and Alfredo, 2022; Miranda and Corica, 2018)

Figure 5. Grammars of Youth framework populated with the identified grammars and youth pragmatics of MMFD participants

10.2.1. Plotting a path

In plotting a path into and beyond the MMFD, the majority of participants pursued a pragmatic of familial continuity. In attending CONALEP, selecting their *carrera*, and identifying future occupations, young people drew on the class-informed habitus and capitals at their disposal, assessing pathways that would be supported by the prior experiences of family members to be the most rational for selection (Breen and Goldthorpe, 1997; Hodkinson and Sparkes, 1997). These pathways were

therefore the most visible, accessible, and well-resourced options on offer to young people, and, given their precarious class positionings, those most likely to offer predictability and stability (Wang, 2020). The explicit promotion of the MMFD to prospective students on the basis of its purported employment outcomes further reinforced this reasoning. Evidently, this pragmatic has the potential to be reproductive of the existing social class structure as educational and occupational patterns are transmitted across generations (Bourdieu and Passeron, 1990; Devine, 2010). Equally, however, the strong and universal pragmatic of aspirational mobility contains the potential for changes in 'big class' terms, as young people pursue class mobility within similar occupational routes (Jonsson et al., 2011).

For young men in industrial *carreras* and young women in the service sector, such familial continuity reproduced not only classed, but also gendered patterns in occupational history. However, for participants that made more non-conformist occupational choices in terms of gender (i.e. women in the industrial sector and men in the service sector), this familial continuity was more strongly influenced by classed facets of habitus than by gender expectations. Male accounting students cited female relatives as their occupational predecessors, while female industrial students cited fathers and brothers as important occupational guides (Frank and Frenette, 2019). Importantly, however, women faced a variety of social and policy barriers to making such non-conformist choices, while men did not report equivalent constraints (Curran and Tarabini, 2022). Thus, the pragmatic of familial continuity contained the potential for both transformation and reproduction of the grammar of gender, being more strongly oriented by the availability of class-informed occupational resources, but nonetheless tempered by the obstacles facing women in pursuit of a gender non-conforming pathway.

Carlos and Rosa were two examples of this familial continuity being leveraged towards alternative future pathways through a pragmatic of conformist non-conformism. Driven by personal interest in careers that sat far outside of familial occupational histories, both young people navigated a conformist pathway through the MMFD that remained open to these non-conformist goals. However, the risks contained within these unfamiliar trajectories were notably high (Borlagdan, 2015; Wang, 2020), and the vulnerabilities produced by the intersecting grammars of gender and class became evident in Rosa's struggle and Carlos' comparative success in maintaining such non-conformism (Devine, 2010; Torche, 2015). As such, each individual's efforts at transforming their classed occupational positioning were differentially constrained or enabled by their particular relationships to the grammars of gender and class (Acker, 2009), resulting in a promising pathway to significant transformation for Carlos and a return to the lowest-quality feminised work within the industrial sector for Rosa (Torre, 2019).

10.2.2. Navigating gender

The grammar of gender was influential for several pragmatics that young people employed in their transitions. For women in industrial *carreras*, a pragmatic of resilience and resistance had been instrumental to their arrival in MMFD programmes, as they contested norms about the horizontal gender segregation of vocational training and the labour market (Bridges et al., 2020; Lester, 2010). Indeed, this pragmatic was crucial to their continuity in the MMFD when faced with unequitable and discriminatory learning and employment conditions, fomented by the exploitative norms of maquiladora industry (Barlean, 2018; Salzinger, 2003; Taylor, 2010). Nonetheless, maintaining trajectory continuity in defiance of persistent social costs was a continuous task, and these women sometimes adopted pragmatics of harassment avoidance and professional self-preservation that carried them away from the most relevant or prestigious positions and institutions with the aim of reducing future adversity (Denissen, 2010; Smith, 2013; Torre, 2019). As such, the MMFD acted as a forum of gender socialisation in which existing gender norms and hierarchies were transmitted, but were responded to in a combination of reproductive and transformative ways (Lamamra, 2017).

Enrique was emblematic of an intersection between class and gender found in the pragmatic of masculine mobility, whereby (particularly eldest) young men take on primary responsibility for lifting their families out of poverty (Stahl and Adams, 2023; Velez-Grajales et al., 2014). This connected to the affordance of greater freedom and support for their aspirations from young men's families (Diaz-Loving and del Castillo, 2010; Miranda Guerrero, 2007), but equally could produce a significant emotional burden – one that social norms related to masculinity could make difficult to disclose.

In reconciling the evidence of gender inequalities within and surrounding the MMFD, two further pragmatics were important for young people's transitions. While a pragmatic of resilience and resistance was interwoven with women's identification and contestation of gender inequalities and supported growing gender consciousness, it equally contributed to and existed in longitudinal flux with a pragmatic of individualism-exceptionalism. Having successfully entered spaces in which they were 'not supposed' to be (Smith, 2013), young women sometimes viewed this as a product of their own exceptionalism and proffered changes to women's attitudes as the solution to gender inequalities, undercutting the transformative potential of collectively contesting patriarchal structures (Cech, 2013; Seron et al., 2018). Relatedly, young men (unconsciously) adopted a pragmatic of inequality hypocognition, which obscured their relative advantage over their female peers and supported a perception of egalitarian meritocracy within the MMFD and broader society (Laurell, 2015; Wu and Dunning, 2020). The toleration of gender discrimination and inconsistency

of sexual harassment training (see section 10.3.1) within MMFD policy structures further promoted these twin reproductive tendencies (Kelly et al., 2015; Lamamra, 2017).

10.2.3. Experiencing the world of work

In addition to these highly gendered experiences of the world of work, young people developed further pragmatics that responded to their emergent status as 'workers' precipitated by their MMFD participation. Workplace training represented young people's first engagement with a set of (somewhat) formal industrial relations and thus cultivated their initial strategies for relating to employers and the labour market (Valiente and Scandurra, 2017). Given the exploitative workplace norms of many maquiladora industries (Cooney, 2001; Taylor, 2010) and the absence of mechanisms for youth collectivism within MMFD policy design (Vanderhoven et al., 2024), participants' first experiences of negotiating working/learning conditions most often culminated in a pragmatic of conflict avoidance (Lehmann, 2005; 2012). Despite the ostensible support of CONALEP staff in challenging poor practice by host firms, participants typically calculated that contesting such inadequacies would produce more disruption and risk to continuity than benefit. This pragmatic of conflict avoidance developed into one of exploitation tolerance, such that extractive, discriminatory, and dangerous industrial practices were noted, but rarely challenged, as young people progressed into their onward careers. Thus, in a process of sectoral socialisation, the firm lottery that existed within the MMFD contained significant possibility for the reproduction of exploitative industrial norms (Avis et al., 2021; Esmond and Atkins, 2022). A latent and occasionally evident pragmatic of self-advocacy – which might have challenged this – was stifled by young people's systemic omission from MMFD policy processes (Vanderhoven et al., 2024).

The MMFD was effective in generating an orientation to a pragmatic of labour market negotiation; participants had absorbed messaging that dual training experience would give them the information and leverage needed to negotiate favourable conditions within a competitive labour market. However, the ability to *exercise* that pragmatic was heavily mediated by social class, gender, and crisis shocks to the labour market (Auspurg and Gundert, 2015; Borlagdan, 2015; Hernández-Fernández et al., 2022). Poorer participants' dependency on employment of any kind undercut the leverage generated by their workplace experience such that they had to accept work of poor quality and relevance to their training. Young women faced horizontal and vertical practices of gender discrimination that overrode opportunities for negotiation. Furthermore, the highly constricted industrial labour market faced by a cohort graduating into a global pandemic exacerbated existing issues of age-based discrimination (ILO, 2020; Sánchez-Soto and Bautista León, 2020) and opened up sectoral disparities favouring participants working in the better-performing service sector (Ruch

and Taskin, 2022). As such, the transformative potential of fostering a pragmatic of labour market negotiation was ultimately transmuted into a reproductive mechanism that offered most benefit to (relatively) higher-class men working in the female-dominated service sector (Azmat and Petrongolo, 2014; Borlagdan, 2015; Sauer et al., 2021).

10.2.4. Responding to crisis

Given the exceptional circumstances of the global Covid-19 pandemic, young people had to elaborate pragmatics that charted a response to crisis conditions. For the remaining duration of their MMFD training, this was primarily one of waiting it out. The unexpectedly long-term nature of the disruption produced an unfolding inertia to generating alternative strategies, reinforced by the absence of any channels within MMFD structures for students to communicate or organise on a collective basis (Vanderhoven et al., 2024). Only once the graduation date had passed, and the impossibility of their return to the workplace was assured, could participants begin to formulate new pragmatics.

For those that could afford to do so, this waiting it out pragmatic carried over into one of waiting it out in HE, postponing planned entry to employment (Hernández-Fernández et al., 2022). The hostility and restriction of the crisis labour market rendered the sheltered and digitally-maintained university environment particularly appealing (Barr and Turner, 2013), enabled by open permeability between the MMFD and tertiary education and the relative abundance of relevant and accessible HE provision in the local education ecosystem. For poorer participants, especially women, waiting it out in HE still required engaging in employment (usually of low quality and relevance) to support tuition costs, producing associated time and learning costs (Bozick, 2007; Moreau and Leathwood, 2006). For the poorest students, a pragmatic of economic survival overrode the attractions of waiting it out in HE, such that they never entered or ultimately left higher education to generate sufficient survival incomes. Thus, the subjective grammars of gender and class produced important constraints on the pragmatics that certain young people could elaborate in response to the temporal grammar of the Covid-19 pandemic. Although the ultimate outcomes of a waiting it out in HE pragmatic are not captured by this study, the well-being, learning, and professional costs of engaging in low quality and survival work and of early HE exit suggest that crisis response pragmatics will likely be reproductive of existing class and gender disparities (Hernández-Fernández et al., 2022).

10.2.5. Fashioning future selves

Participants developed a number of pragmatics that related to their plans and desires to construct a future vision of themselves, one which was viewed as a developmental culmination of their current choices and actions. Most consistently and insistently, young people mobilised a pragmatic of aspirational mobility, which was constructed in contrast to their current and relatively impoverished circumstances. Participants viewed their MMFD participation and subsequent transition trajectories as working towards 'a better life', which would incorporate financial independence, higher living standards for their families, and increased consumption and leisure (Laurell, 2015; Velez-Grajales et al., 2014). The grammar of Mexican neoliberalism encouraged participants to see such aspirations as both materially achievable and morally obligated within a context of purported meritocracy (Aldinucci, 2022; Aldinucci et al., 2021). This pragmatic of aspirational mobility was further interrelated with that of HE-prioritisation. The upward class mobility young people sought was inextricably bound up in cultural-educational norms and (less consistent) economic realities that connected social mobility to tertiary education and managerial employment (Howell, 2018; Sánchez-Soto and Bautista León, 2020; Villa Lever, 2016).

Nonetheless, prior to the arrival of pandemic crisis conditions, all participants had planned to combine these studies with relevant work in a symbiotic balance of vocational and HE-prioritisation pragmatics. This was intended to generate a future occupational selfhood based on a mutually reinforcing combination of theoretical development and practical application (mirroring the 'dual' ethos) (Lewis, 2007b; Mayer, 2001). However, crisis conditions revealed the hierarchisation of these pragmatics as the vast majority of participants consistently pursued university participation, despite costs to other facets of their personal and professional lives. For the (overwhelmingly male) participants who received familial support to delay labour market entry until conditions improved, this also allowed them to elaborate a pragmatic of self-care and enrichment during an extended period of 'emerging' adulthood (Arnett, 2014; Furlong et al., 2011), utilising creative and leisure activities to both bolster current well-being and develop a more holistic future self – thus perpetuating such forms of class inequality (Stalker, 2011; Zeijl et al., 2001). For those who combined work and study, divergent sectoral impacts of the pandemic crisis became evident. Service sector graduates were able to pursue the planned balance of vocational prioritisation and HE-prioritisation pragmatics as the flexible and developmental entry-level roles on offer in their sector (often with dual host firms) were both financially and pedagogically supportive of their educational ambitions. For those in the industrial sector, labour market entry was often a counterintuitive product of HE-prioritisation, as the income from even informal or irrelevant work was needed to pay participation costs. For three of the four participants who never entered or

ultimately exited higher education, pandemic-related financial and well-being pressures were decisive in their abandonment of a HE-prioritisation pragmatic, most often superseded by one of economic survival. As such, their initial vision of future selfhood became increasingly fragmented and uncertain (Neale and Flowerdew, 2003). Raúl was exceptional in his decision to exit university motivated by a pragmatic of vocational prioritisation, his strong vocational habitus encouraging him to find greater self-developmental potential in the world of work (Colley et al., 2003).

Thus, the pathway to achieving the dual vision of occupational selfhood that had been fostered through participation in the MMFD was fractured along lines of class, gender, and training sector, not least due to the temporal grammar of Covid-19. Being least impacted by crisis conditions, service sector students were engaged and satisfied in pursuit of their planned occupational self. Industrial students struggled to do so, the poorest and female participants finding themselves the furthest from that ideal and engaged in work that offered minimal developmental potential. Indeed, the interrelationship between the achievement of the 'dual' self and participants' desired aspirational mobility meant that the pathway to 'a better life' contained important stratifications even one year after MMFD graduation. Thus, the considerable potential for far-reaching and inequitable consequences of the pandemic were visible in these reproductive processes (Hernández-Fernández et al., 2022).

10.3. More equitable and effective MMFD policy

Given these insights generated about the impacts of the MMFD on youth transitions in Coahuila, I now turn to RQ3, which considers how the programme could be made more effective and equitable for young people in this region and wider Mexico. It should be noted that the MMFD is highly devolved in its policy format between different states and institutions (López-Fogués et al., 2018) and some grammars and related pragmatics are likely specific to the context of urban Coahuila. Therefore, the finer detail of the findings in this thesis should not be presumed to transpose in relevance to all parts of a highly diverse country. Nonetheless, having worked closely with dual students and graduates in two further and contrasting states (Vanderhoven et al., 2022; 2023), the broad principles of the following policy directions appear pertinent to MMFD programmes nationally.

10.3.1. Addressing inequalities

This thesis has contained extensive discussion of the role of subjective grammars in producing important inequalities in MMFD transitions. I have argued that gender and social class represent

powerful systems of social organisation that are not only reflected, but actively reproduced within, and perhaps exacerbated by, the structures of MMFD policy. This conclusion mirrors the well-documented evidence of disparities along lines of socio-economic status, gender, race, ethnicity, and migration status found in dVET systems in Europe (Borgna, 2016; Chadderton and Wischmann, 2014; Deissinger, 2015; Eckelt and Schmidt, 2014; Granato et al., 2015; Haasler and Gottschall, 2015; Protsch and Solga, 2016). Despite this, consideration and mitigation of such inequalities has not been an important feature of dVET transfer efforts or of MMFD policy design, which has been pursued in a largely inequality-blind fashion (Hernández-Fernández et al., 2022). This section outlines alternative policy approaches that might help to ameliorate the inequitable experiences highlighted within this thesis.

A note before continuing: Considering this above-cited evidence and the discussion in section 3.4 about the profound relevance of skin tone and indigeneity to social inequality within Mexico (Villarreal, 2010), it might appear odd that discussion of these factors has not featured in the analysis. Whether due to the relative homogeneity and 'whiteness' of Coahuila's population or due to the research tools employed in *Dual Apprenticeship* and this doctoral project, these themes did not come to the fore in any of the interviews or in my interpretation of the data. It is, however, highly unlikely that this would hold true in other regions of the country, particularly in southern states where Indigenous and Afro-Mexican populations are far greater and where racialised identities are strongly related to educational opportunities and outcomes (Flores and Telles, 2012; Howell, 2018; Stromquist, 2004). Indeed, this absence of evidence speaks to how the advantages of the privileged group – here, the economically and racially privileged north of Mexico (Delajara et al., 2022) – can remain unacknowledged when viewed solely through the lens of that group (Olcoń, 2023; Shields and Paulson, 2024). Therefore, while I am only able on the basis of this doctoral research project to talk in detail about gender and social class in relation to MMFD policy features, I would encourage a similar degree of scrutiny and consideration for other forms of inequality that are likely to be found within dual training settings across Mexico, particularly those related to racialised identities.

The findings highlight the early and ongoing influence of gender in shaping young women's MMFD transitions in industrial *carreras*. Implicit and explicit gender biases within CONALEP teaching practices were important risk factors in participants' histories that require attention. Equally, resources and mentoring that provide young women with a sense of representation and possibility could foster the motivation required to pursue a counter-cultural trajectory. Female mentors, both inside and outside the workplace, can act as important sources of support, role-modelling, and advocacy for young women facing adverse training conditions (Beck et al., 2022; González-Pérez et

al., 2020). Such mentoring has been acknowledged in other Mexican policy initiatives as a beneficial means of promoting women's participation in the male-dominated STEM sector (Orendain, 2019; López, 2018; SEP, 2018). In many cases, it may be most suitable for this mentoring function to sit outside of the workplace, offering independent advice to trainees and recognising the human resource limits that firms may face (Stanwick et al., 2021). Furthermore, an ecosystem of interactions with diverse and well-matched mentor figures has been found to be more effective than single, mandated mentoring interventions inside companies (Beck et al., 2022).

Gender-conscious career guidance can also begin well in advance of dual training, instigating a broader process of gender consciousness-raising which recognises the constraints that gender produces and responsibly empowers young people to challenge these throughout their professional trajectories in a sustainable fashion (Hietanen and Pick, 2015; Lehmann and Taylor, 2015). To be most effective, such interventions would also need to involve families (DeJaeghere and Lee, 2011). However, both mentoring and career guidance interventions should not only focus on the identities and behaviours of women but also seek reform of *men* and *masculinity* in the workplace and school. Working to trouble each pole of the binary not only subverts the tendency to place the onus on women for their own inclusion, but also releases minority men of different kinds from the constraints of a restrictive gender culture (Bridges et al., 2020; Galea et al., 2015).

Looking to firms, gender-conscious parameters could be used to assess a company's suitability for participation and monitor their implementation performance. This could have related ameliorative impacts on gender discrimination in the selection and post-graduation hiring processes. While recognising the material costs this generates, training for workplace mentors, particularly those operating in highly gender segregated work environments, could be used to challenge the negative experiences captured in this study and promote the success of pioneer women in industrial settings (Galea et al., 2015; Stanwick et al., 2021). Such a focus on capacity building would be preferable to the production of gender equality policies that act as a tick box exercise but do not advance genuine change (Bridges et al., 2020). Overall, regulation of the conduct and relationships with dual host firms would benefit from a gender-aware sensibility over the current gender-blind approach. To support this, gender equity would need to be incorporated as a fundamental parameter when conceptualising and assessing training quality (Campbell et al., 2011).

Interview data also suggested that students were receiving minimal and inconsistent training about sexual harassment and gender discrimination, with male students particularly likely to report receiving no such training. The training that did occur appeared to heavily emphasise student self-reporting as the only mechanism of oversight and enforcement. This included relying on weekly reports, which must be signed off by firm supervisors, as a means to disclose sexual harassment to

CONALEP tutors. Although self-reporting is an important avenue that should be available to students, as the interview data demonstrates, it is not effective when students are not confident in naming treatment as harassment and when the consequences are presented as highly disruptive and public (Bridges et al., 2020; Firestone and Harris, 2003). Thus, used in isolation, self-reporting is an ineffective method of addressing sexual harassment and gender discrimination and places the onus on victims to come forward (Galea et al., 2015). There was no evidence from student interviews that CONALEP or other stakeholders conducted regular visits to the workplace, or that students were trained in how to support each other with such issues.

It is particularly concerning that male interviewees were the most likely to have received no sexual harassment training. This suggests that any training that did exist may have been targeted at women students only. It is perhaps unsurprising therefore that male students appeared unaware of discriminatory practices and harassment in the training environment. To disrupt the cycle of gender inequity, students of all genders would need to be sensitised to its forms and effects, and trained to reflect on their own behaviours and challenge those of others (Galea et al., 2015).

In considering class and income inequalities within the MMFD, there is evidence that the dual scholarship provides an important protective mechanism for many poor students, allowing them to focus on their educational and developmental goals (Montacute, 2020). However, delays and inconsistencies in payments posed important threats to well-being and continuity for some, and, for the poorest students, the sum of 2,000 MXN per month was insufficient to provide these protections. One of participants' most common suggestions for improving the MMFD was to increase scholarship support.

The importance of the dual scholarship for some low-income students is a notable finding for the wider national dual training system. Coahuila was unusual for continuing to offer a dual scholarship in 2020/21. At the launch of the MMFD in 2013, a 2,000 MXN stipend, funded by the state, was universal across the country. However, the 2018 change of government to the López Obrador administration saw the removal of the dual scholarship, and its replacement with a universal upper secondary scholarship called Benito Juárez. In Coahuila, thanks to strong relationships between the Secretariat of Public Education (SEP) and employers' bodies, an additional 2,000 MXN of scholarship was leveraged from dual firms. This meant that up until 2019, students in Coahuila received 4,000 MXN per month. When the government-funded portion was removed, they still retained 2,000 MXN per month, in addition to their Benito Juárez payments. For students in other states of Mexico, this has not been the case, and they receive no additional funding to support their dual training. Considering the elevated costs of MMFD participation and the insufficiency of even the 2,000 MXN

scholarship for the poorest students, this suggests that the removal of the government-funded scholarship represents a major equity concern for the national dual system.

Nonetheless, a perspective on the wider TVET system does invite some caution. Notwithstanding the role of cash-transfer programmes in political electioneering (Roldán Vera and Robles Valle, 2020), the Benito Juárez scholarship recognises that all students from low-income households face substantial barriers to continuing in upper secondary education of any kind. While the dual scholarship is certainly a necessary provision to account for the uneven impact of increased participation costs, if the provision of a high value scholarship to a small number of dual students comes at the cost of a lower value scholarship available to all low-income students, this is not necessarily desirable (Cervantes et al., 2021; Vanderhoven et al., 2024). However, as modelled in Coahuila, levying a scholarship contribution from dual firms could be a means of maintaining both forms of support.

10.3.2. Fostering training quality

There are also a number of measures that could be used to more generally enhance the training quality and associated longer-term impacts of the MMFD. Currently, students are subject to a firm lottery in terms of the commitment and resources that employers are able and willing to expend on their trainees (Maitra and Maitra, 2021; Valiente et al., 2020b), exacerbated by the prevalence of exploitative logics within maquiladora manufacturing (Cooney, 2001; Taylor, 2010). Greater attention to quality within firm selection and oversight mechanisms, and the use of approaches that do not rely solely on student reporting would therefore be advisable (Valiente and Scandurra, 2017). For example, CONALEP staff could conduct periodic visits to the workplace to assess the relevance and appropriateness of learning tasks and conditions. Workplace mentors and managers could engage in training that sensitises them to the learning aims of the programme and the specific requirements of overseeing student development (Eraut, 2004; Filliettaz, 2014). This could further interconnect with gender-conscious training to address current intra-firm quality disparities. Nonetheless, it should be acknowledged that more stringent quality demands on employers remain in tension with the goal of expanding the MMFD offer, in a scale-quality trade-off (Fuller and Unwin, 2011; Lehmann, 2005; 2012; Valiente and Scandurra, 2017).

Before entering the workplace, trainees would also benefit from more robust and consistent information about their rights, and the means by which these rights can be enforced. The use of contracts/*convenios* is positive, but enforcement appears to rely on student reporting and placements being changed or MMFD participation ended – consequences are thus graver for

students than for exploitative firms. Students who lack confidence or experience in workplace environments can therefore find themselves disproportionately vulnerable to exploitation (Lehmann and Taylor, 2015) and young people's inculcation with exploitative work norms risks being carried through into their onward careers (Avis et al., 2021; Esmond and Atkins, 2022).

Finally, the articulation and balance between school-based theoretical learning and work-based occupational training could be improved (Eichhorst et al., 2013; Gessler, 2019). Students routinely reported feeling underdeveloped in terms of generalist and theoretical skills, although they emphasised that companies were far more adept at imparting specialist skills related to their *carrera* (López-Fogués et al., 2018). Indeed, an over-reliance on incidental learning in the workplace provides the conditions for inequalities of gender and class to be reproduced and for firms to prioritise production demands over student development (Esmond, 2018). Relatedly, time for theoretical learning on campus was highly compressed – in Saltillo taking place over three weeks at the start of each term, in Torreón through a half-day each Saturday – and came in addition to approximately 35 hours in the firm each week. This produced substantial time pressures for all students but especially for those that needed to maintain additional paid work to support their studies (Kandel and Post, 2003). Learning timetables could be recalibrated to more closely resemble the time commitment expected of school-based students and increase contact time for theoretical learning; for example, involving four days in the workplace and one day on campus each week (or an equivalent balance adapted to sectoral specificities; Batliner, 2014). This brings the additional benefit of affording trainees more time to support each other and learn collaboratively (Eraut, 2004). Ultimately, such recalibration could help ensure that MMFD graduates are equipped with a greater breadth of theoretical knowledge that extends beyond the interests of individual host firms, supporting more diverse employment transitions and young people's interest in higher education entry.

Conversely, the prevalence of very short MMFD placements among industrial sector students (i.e. starting the programme late into fifth semester) appeared to undermine the development of sustainable relationships with firms that could encourage post-completion retention (Wolter and Ryan, 2011). Ensuring that the minimum programme length of one year is adhered to and that trainees are not rotated through multiple fragmented placements could contribute to the employment outcomes sought by policymakers.

10.3.3. Supporting transitions

Considering students' transitions beyond the MMFD, findings indicate that relying on host firms to provide onward employment is an insufficient strategy, particularly considering the risk of crisis periods (Hernández-Fernández et al., 2022). Efforts will also need to be made to generate connections between students and the broader labour market (Brown, 2022) and to ensure that the MMFD is known to employers for its distinct employment value. It will also be important to ensure that post-graduation administrative and communication processes are effective and timely so as not to undermine graduates' efforts to engage with the labour market. If such issues are unaddressed, they leave space for inequalities to be reproduced (Hernández-Fernández et al., 2022).

The use of the 'job board'/*bolsa de trabajo* in Torreón appears to have mitigated some of the negative effects of the pandemic on employment transitions. By leveraging CONALEP's advantageous links to industry and matching vacancies to candidates based on knowledge of graduates' expertise, it appears to have contributed to more advantageous and smoother employment transitions for young women and low-income graduates. Nonetheless, the expansion of such a system produces spillover equity implications for the broader VET system (Cervantes et al., 2021). As dual graduates are given priority for these posts, other CONALEP graduates are put at a further disadvantage (already possessing less work experience than their dual peers). Furthermore, the quality of these work opportunities is still dependent on the state of the local labour market, and there is a general need to tackle longstanding issues of employment quality, youth exclusion, and gender discrimination (Sánchez-Soto and Bautista León, 2020; Torre, 2019). Indeed, active intervention in labour markets to foster quality employment practices, generate jobs for young people, and reduce cyclical crisis would appear to be a necessary twin to dual training – if it is to achieve its desired effects (Avis et al., 2021; Bell and Blanchflower, 2011).

This study further highlights the fundamental importance of higher education to MMFD students' aspirations and transitions (Hernández-Fernández et al., 2022). Despite this, current policy apparatuses focus exclusively on the aim of integrating more young people directly into the workforce. Given a cultural context in which higher education and social mobility are strongly intertwined in the public imagination (Hernández-Fernández et al., 2021; Howell, 2018; Sánchez-Soto and Bautista León, 2020), and thus the majority of academically achieving young people aspire to this route (Aldinucci et al., 2021), more attention might be paid to how young people could be supported to make advantageous decisions about HE entry and how effectively MMFD training prepares young people to succeed in university entrance exams and beyond. If greater workforce

integration is indeed to be supported, then the MMFD will need to be combined with policy interventions that address structural barriers to young people's labour market participation (Sánchez-Soto and Bautista León, 2020), given the evidence from this study that graduates struggle to access the technician-level posts they have been trained to fill and women are systematically and routinely excluded from male-dominated industries. Equally, supporting those students with a preference for direct labour market insertion will require careers interventions that highlight meaningful alternatives to HE and promote strategies which could help work-oriented students to secure a job of sufficient quality as to diminish the pressure to study.

Finally, given the emphasis of dual training programmes on the concept of 'successful transition' as a primary goal and outcome, student support, particularly for vulnerable students of different kinds, will need to focus not just on placement in a firm and delivery of training, but on the wider and longer process of transition that MMFD participation instigates and sits within (Brown, 2022). This requires forms of student guidance and support that investigate the personal and familial circumstances of students, respond to these in context, and last beyond the end of training (Beaudry and Perry, 2020). CONALEP staff currently play a positive and important role in this regard, but do so with minimal resources or systems support from MMFD policy structures. If the policy success of MMFD is to be measured in terms of transition outcomes as much as training outputs, then policy design will need to intervene more effectively and decisively in this phase, recognising the additional challenges graduates face on the basis of class, gender, and, undoubtedly, other social inequalities (Borlagdan, 2015; Brown, 2022). Leaving young people to navigate these challenges alone, armed only with their already limited resources, is unlikely to produce the outcomes desired by policymakers and promised by dual training discourses.

10.3.4. Involving young people

Overlaying the three preceding themes is the need for greater involvement of young people in the design, delivery, and evaluation of the MMFD (Vanderhoven et al., 2023; 2024). This study has highlighted that policy structures offer minimal opportunities for students to exercise agency over their transitions (Lehmann, 2005; 2012) – for example, expressing employer preferences, providing feedback on training quality, working collaboratively with other students, acting collectively for policy change – and for graduates to contribute their expertise. This study has further shown that young people are able and willing to generate sensitive reflections on their experiences of the policy and illuminate areas for improvement not foregrounded by the perspectives of institutional stakeholders (Hernández-Fernández et al., 2022). As such, consideration of how young people could be offered more power within MMFD decision-making, both as individuals and as a collective, could

offer benefits to programme quality and equity, youth empowerment and maturation, and transition outcomes (Langthaler and Top, 2023; Vanderhoven et al., 2024).

As already discussed, the traditional tripartite governance arrangements found in DACH dVET systems is not well-suited to the complex and long-standing socio-political context which produced the current bipartite compromise in Mexico (Cervantes et al., 2021; Teichman, 1996; Zepeda, 2021). However, some form of redress will need to be directed at the current representational deficit, if the broad human development aims of dual education are to be a realistic end product of the MMFD, particularly as relates to training quality and decent work outcomes (Langthaler and Top, 2023; Vanderhoven et al., 2024). Nascent efforts in Mexico to build networks of dual students and graduates who could act as representative bodies, prioritise the student experience, and act collectively in defence of young people's rights warrant further investment and development (Vanderhoven et al., 2023; 2024).

10.4. A local policy in global context

I turn now to RQ5, reinserting this new knowledge about the MMFD into its global policy context of international policy transfer, scrutinising the discursive claims of the 'global apprenticeship agenda' explored in chapter two. This prior analysis demonstrated that apprenticeships are presented as an effective response to economic crisis, quality issues in school-based TVET, changing and unmet skill demands, and issues of social exclusion (see Table 2, section 2.5). Through the development of human capital aligned to the demands of the labour market, kept in check by a regulatory apparatus, it is suggested that apprenticeships will contribute to economic growth, crisis resilience, and socio-economic inclusion (Vanderhoven, 2023). However, the findings presented in this thesis point to ways in which such claims and assumptions are troubled by the contextual realities in which young policy participants live. These incongruences between the reputedly 'global' policy idea of apprenticeships and the contextual realities of implementation, particularly those more prevalent in LMICs such as Mexico, can undermine the purported outcomes of the policy. As such, their utility requires careful reconsideration.

Firstly, social inequalities found in wider society are reflected and often reinforced in dual training environments and later transitions (Chadderton and Wischmann, 2014; Eckelt and Schmidt, 2014; Haasler and Gottschall, 2015; Hernández-Fernández et al., 2022; Maitra and Maitra, 2021; Protsch and Solga, 2016). However, the well-evidenced generation of inequalities that occurs within 'donor' dVET systems remains unacknowledged in global discourses and therefore risks reproduction in new contexts (Mayer, 2001; Vanderhoven, 2023). Furthermore, while dVET and broader TVET are often

knowingly targeted at lower-class and -income groups, the nature of poverty in LMICs is not fully accounted for in the conception of how apprenticeships will function. The pervasiveness of poverty (only 27% of Mexico's population is deemed to be neither poor nor vulnerable; CONEVAL, 2024), high rates of inadequate housing (18% of Mexicans live in informal settlements; World Bank, 2024b), and high proportions of the population labouring in informal conditions and falling outside the scope of social security protections (Antón et al., 2012; Brandt, 2011) offer distinct threats to continuity and impact the priorities and decision-making of young people. This study has highlighted the influence of additional work, elevated participation costs, constrained home working environments, and familialism-informed financial obligations in inequitably shaping the pathways of not only the poorest students but arguably the majority of MMFD target populations. Furthermore, gender inequalities related to hiring discrimination, gender-based violence and harassment, labour market segregation, and the gendered division of labour (which are by no means unique to LMICs but nonetheless pronounced in contexts with less institutional capacity for proscribing and enforcing gender equality measures and religio-colonial legacies of conservative sex-gender regimes; Ariza and De Oliveira, 2005; Patil, 2017; Viveros-Vigoya, 2016) intercede in the dual training environment with particular force due to increased proximity with the inequality regimes of the world of work (Acker, 2009; Estévez-Abe, 2005; Lamamra, 2017; Ryan, 1998). Thus, the capacity of apprenticeship programmes to respond to socio-economic *ex*clusion and generate socio-economic *in*clusion appears compromised (Avis, 2016). This could be ameliorated through acknowledgment and proactive mitigation of social inequalities *within and beyond* dVET participation (i.e. not only in access), but this rarely features in global discourses and is absent from MMFD policymaking (Hernández-Fernández et al., 2022; Vanderhoven, 2023).

The prevalence of poorly regulated and informal work environments is also consequential for both training quality and outcomes. While the presented findings suggest that the MMFD offers an important means of accessing higher quality occupational training than that delivered in under-resourced school-based environments (López-Fogués et al., 2018), this is tempered by the firm lottery dynamic and the accommodation of exploitative employer practices. Coahuila's position within an extractive and profoundly unequal global political economy that uses LMICs as low-cost 'processing sites' (Cooney, 2001; Larentes da Silva, 2022) is reproduced and unchallenged in some dVET learning environments by way of a heavy reliance on work-based learning and minimal regulation of placement conditions (Pilz and Wiemann, 2021). Thus, the Institutional Political Economy-informed insistence on robust governance arrangements proposed by the EU, ILO, and OECD appears pertinent to achieving the desired training quality improvements (Steedman, 2012). However, this sits in tension with incentivising expanding firm participation (Lehmann, 2012; Pilz and Wiemann, 2021; Valiente and Scandurra, 2017). As such, one prime audience for MMFD

participation becomes (predominantly European and American) multi-national corporations with extensive training budgets who require specialist workers for their operations that school-based TVET is seen as struggling to produce (López-Fogués et al., 2018; Pilz and Wiemann, 2021; Valiente and Scandurra, 2017). However, there are important questions to be asked about the ethics of reorienting state education provision to the needs of a small pool of transnational private actors who have consciously located their operations in regions such as Coahuila in order to benefit from low labour costs and weaker regulation (Cooney, 2001; Larentes da Silva, 2022; Taylor, 2010). This becomes further relevant when considering onward transitions. In a context of high informality and a very limited quantity of formal and high-quality employment for young people (Castillo Fernández et al., 2019), if large proportions of training are reoriented to this 'unmet', but narrow, labour market need, then policy participants and the state will make substantial investments in firm-specific skills that are not utilised and rewarded. While training of this kind might play a role in long-term stimulation of more formal employment, if it comes at the expense of generalist occupational skills (as seen in these findings) then there are costs for young people graduating before that point who must compete on open, restricted, and already discriminatory labour markets (Adams, 2007; Estévez-Abe, 2005; Sánchez-Soto and Bautista León, 2020; Steedman, 2012; Valiente and Scandurra, 2017).

Apprenticeships and dVET are recognised as being more vulnerable to crisis, dependent as they are on the willing participation of well-performing businesses and a healthy labour market ready to absorb graduates (Ryan, 1998; Valiente and Scandurra, 2017). The sectoral disparities presented in this thesis attest to the decisive role that crisis conditions can play in post-dual transition outcomes. As such, the touted crisis resilience benefits of apprenticeships require some scrutiny. While vocational training can help to alleviate youth unemployment generated by weak alignment between the skills imparted in educational settings and the demands of available employment, it cannot counteract deficits in employment quantity or quality (Pilz, 2017). Furthermore, the immediate impacts of crisis on heavily work-based forms of training – i.e. disruptions to learning and fractured labour market transitions – can have long-lasting impacts for the affected cohorts of young people (ILO, 2020). In Coahuila, many graduates found shelter in higher education thanks to the permeability and accessibility of higher education from the MMFD. However, these structural and policy conditions are not reliable features of apprenticeship ecosystems, particularly in LMICs where higher education remains a costly and/or elite endeavour (Reinders et al., 2021). Widespread higher education entry is also not the intended outcome of reforms towards apprenticeship. Therefore, the relevance of claims about crisis response and crisis resilience made in support of apprenticeships are disputable. More nuanced consideration of what outcomes the policy is able to produce in this regard is especially pertinent for LMICs, which are increasingly and

disproportionately impacted by crises related to public health, environmental and natural disasters, and conflict (Kohrt et al., 2019).

In addition, the question of regulatory formations that oversee apprenticeship systems are complicated in adopting contexts by institutional histories and realities of which formal apprenticeships are not an 'organic' component (Langthaler and Top, 2023; Valiente and Scandurra, 2017). With dVET, there is a danger that it is transformed by way of the transfer process[32] from a system embedded in a related work culture, governance structure, and economic landscape (Gonon, 2014) into a simple reorientation of public TVET towards employer-led training in workplaces that focuses narrowly on employment (Esmond and Atkins, 2022), producing a substantial vulnerability to exploitative and low-quality training practices. It is not necessary or desirable to seek replication of 'donor' configurations and there is evidence of inventive and contextually-relevant reorientation of institutional responsibilities (Vanderhoven et al., 2022). However, the call for coordinated regulation in global apprenticeship discourses (especially from the EU, ILO, and OECD) relies on that 'donor' reference point and falls short of fully reckoning with how robust apprenticeship governance might be pursued in new contexts, particularly in LMICs with less resourced and alternative institutional histories, that, as in the case of Mexico, may inhibit legislative change or social partner involvement (e.g. Steedman, 2012). Furthermore, warnings about the fundamental importance of strong regulation co-exist with a presentation of apprenticeships as an almost universally salient and urgent form of reform (Vanderhoven, 2023). As such, the indispensability of suitable regulation to achieving the touted outcomes is often diminished in transfer practice (Langthaler and Top, 2023). In particular, the representation and defence of young people's interests needs to be conceptualised and planned for in contexts where trade unions are not appropriate forums for youth collectivism (Vanderhoven et al., 2023). Significant attention has been directed to the reconfiguration of employer and state roles and responsibilities, but young people (or social partners as their representatives) appear more often treated as a dispensable actor within apprenticeship governance that can be forgone if contextual conditions complicate their involvement (Langthaler and Top, 2023; Vanderhoven et al., 2024).

Finally, this is echoed in insufficient accounts of young people's agency and life projects in global apprenticeship narratives. This points, on the one hand, to a relative neglect of human development priorities in the promotion of apprenticeships and dVET (Vanderhoven, 2023; Vanderhoven et al., 2024). On the other, and as shown in these findings, such an omission generates an inability to

[32] Here referring not simply to specific efforts at policy reform inspired by 'donor' practice but more broadly to the whole process by which dVET and apprenticeships come to be understood as policy objects that can be adopted in a range of global settings.

account for young people's seemingly 'unruly' choices, which likely respond to the surrounding environment rather than the plans and priorities of policymakers (Aldinucci, 2022; Aldinucci et al., 2021). Thus, the priorities of apprenticeship reform cannot be presumed to be the priorities of young people (particularly in LMIC contexts that have been less examined through youth-centred research; Batan et al., 2020; Miranda and Alfredo, 2022), and failure to engage with those realities may frustrate the promised outcomes. Instead of conceptualising young people as a monolithic group that operates according to universal incentives and priorities across the diversity of contexts in which apprenticeships might be implemented, it would be more productive for young people to be understood and involved in policymaking as agentic and contextually-responsive actors (Batan et al., 2020; Miranda and Corica, 2018).

Thus, the findings of this doctoral research point to several ways in which global discursive depictions of the impacts and outcomes of apprenticeships are troubled by the contextual realities in which young people live, particularly in LMICs such as Mexico. This is not to diminish the enormous diversity of contexts contained within the 'LMIC' category, but nonetheless highlights some of the shared challenges produced by resource constraints and colonial legacies (Giraldo, 2016; Kohrt et al., 2019; Reinders et al., 2021), as well as the epistemic inequities that lead to inadequate consideration of this collective of contexts in global policy formulation (Batan et al., 2020; Connell, 2015; Powell and McGrath, 2019; Tripney and Hombrados, 2013). Importantly, these discrepancies between purported and actual policy functioning contain several important risks. Firstly, instead of fostering social inclusion, dVET risks being reproductive of inequalities (Mayer, 2001; Vanderhoven et al., 2024). Secondly, in place of a balanced and high-quality form of skill development, dVET risks becoming a vehicle for the exploitative logics of rent-seeking employers and global capitalist accumulation (Avis et al., 2021; Larentes da Silva, 2022). Finally, in not attending to the priorities of young people, dVET risks failing to achieve both the purported economic and employment effects of apprenticeships and the broader human development outcomes (at least rhetorically) recognised as a central goal of education globally (UN, 2015; Vanderhoven et al., 2024).

10.5. Contributions, limitations, and future directions

This thesis set out to contribute to greater understanding of how transferred dVET programmes impact the youth transitions of students in LMIC contexts. As such, it has engaged with the dialectical relationship between the policy idea of apprenticeships – of which dVET is the 'gold standard' – as a globally relevant and mobile policy object (Vanderhoven, 2023) and the MMFD as a local dVET policy iteration. In pursuing this research aim through such a lens, this thesis has generated three primary contributions.

The first relates to understanding of the literature: the synthesis of grey literature presented in chapter two proffers a uniquely comprehensive view of global discourses about apprenticeship policy advanced by international organisations. Systematic understanding of the role and diverse views of IOs is often underdeveloped in the field of TVET (Klassen 2024), and this exercise (and the associated article in *Globalisation, Societies & Education*) serve an important function in linking together wider debates about global education policymaking held in the field of International and Comparative Education with TVET research interest in the policy transfer of (dual) apprenticeships. It also, in defining the contours of apprenticeships as a policy idea or object, supports interrogation of the claims made about the policy's youth transition impacts, both in this thesis and wider research.

The second contribution is theoretical: the Grammars of Youth framework has yet to receive extensive treatment in Anglophone academic literature (cf. Batan et al. 2020, Miranda and Alfredo 2022). Its application in this doctoral research therefore serves something of a translatory function, supporting cross-pollination of conceptual ideas between parallel literatures. Furthermore, several important refinements and expansions to the framework have been made in the course of this thesis. Situating the framework in relation to more 'canonical' concepts from the sociology of youth transitions (see chapter 4) helps to exemplify the diversity and strength of its conceptual utility. It also assists in developing methodological tools for applying the framework in empirical research. The typology of grammars and diagrammatic representations are two important advances made in this thesis, offering youth transitions researchers new tools for analysing the contextual specificity of youth experience across diverse global settings. It is hoped that this thesis highlights and enhances the value of the Grammars of Youth framework for researchers of youth and provides a useful example of its empirical application.

The third contribution is empirical: thinking specifically about Mexico and the MMFD, no other study (that I am aware of) has followed the transitions of MMFD students for as long or in such depth. This offers useful data and analysis to stakeholders interested in ensuring that dual training is developmental, equitable, and enjoyable for young people in Coahuila and other regions of Mexico by illuminating how the programme interacts with wider youth transition dynamics. It also helps demonstrate young people's value as policy informants and analysts, in a context where this is not systemically recognised (Vanderhoven et al. 2024). Looking beyond Mexico and the MMFD, this thesis contributes to a nascent current of research that critically and empirically interrogates what dVET produces for young people in LMICs and the Global South. This is not because it offers any generalisable conclusions for the entire diversity of this imagined global region or category – it

patently cannot (see limitations below). What it does offer is vindication of the idea that the youth transition impacts of dVET and related apprenticeship models warrant much greater empirical attention in such contexts, because, demonstrably, they do not unfold in the ways predicted by discursive narratives that encourage policy adoption, mediated as they are by contextual realities that have been under-considered in hegemonic (i.e. Northern) conceptions of the policy. This thesis therefore stands as one example of the value and possible empirical form of research that addresses this broader gap.

It should be noted that each of these three contributions are original and distinct from those of the *Dual Apprenticeship* project. The GCRF project focused on the relative role of German cooperation actors in transfer activities, not attending to the normative and ideational functions of IO policy work in cementing universalist understandings of what apprenticeships and dVET will deliver to 'adopting' countries, despite enormous contextual diversity. Application of the Grammars of Youth framework signals an important departure from the GCRF project's interest in policy evaluation, instead pursuing a critical youth studies approach that foregrounds a holistic conception of youth experience. Necessarily, the use of wave one and two data generated by *Dual Apprenticeship* activities presents some limitations to this approach, but it also made the unique value of this doctoral research possible: an entirely independent two-year longitudinal study would not have been temporally or financially feasible, and yet some of the richest and most original insights presented in this thesis stem from the journey taken and the relationships built with these young people *over time*. Thus, the empirical value of this doctoral research also stands apart from that of the GCRF project, offering nuanced reflections on the role of intersectional identities, cohort effects, and socio-spatial factors in mediating the medium- to long- term impacts promised by global apprenticeship discourses.

In tandem with these contributions, this thesis presents some limitations. As highlighted by the Grammars of Youth framework (see chapter 4), the analysis of participants' youth transitions is highly connected to the local context. As such, these findings cannot be presumed to offer relevant understandings of the MMFD across the incredibly diverse country of Mexico, or of different dVET programmes across the broad range of LMICs around the world. This thesis offers only one piece of the puzzle in understanding such policies from a still under-developed perspective (McGrath, 2012; Powell and McGrath, 2019; Vanderhoven et al., 2022). Furthermore, while the Grammars of Youth is useful in directing analytical attention to the contextually specific structures that mediate youth transitions, the contextually responsive strategies that young people elaborate in their transitions to adulthood, and the co-constitutive relationships between these two levels, it does not offer theoretical detail as to *how* specific forms of structure and agency function. I have sought to

overcome this using theoretical bricolage (see deeper discussion in section 4.3.2), but it may be a relevant future development to consider how its combination with other explanatory frameworks might strengthen this more systematically.

The limited sample of this doctoral research project stemming from the qualitative and longitudinal research design likely further limits the relevance of these findings in different settings (see deeper discussion of sampling limitations in section 5.3.3). Analysis from the *Dual Apprenticeship* project to which this thesis is connected (incorporating data from Estado de México and lacking a third wave of interviewing; Hernández-Fernández et al., 2021) has highlighted the MMFD's role as a direct employability strategy (for men), quite contrary to the findings of this doctoral study. This likely stems from important contextual variation between the two states, the sample restriction that occurred between waves two and three of this independent study (see section 5.3.3), and longitudinal extension of the study. Equally, both of these analyses were drawn from the experiences of successful MMFD graduates. Much greater depth of understanding about inclusion, exclusion, and continuity could be gleaned from research with non-applicants, unsuccessful applicants, and non-completers of the MMFD (e.g. see section 7.3.1). Therefore, further longitudinal studies with young people across Mexico who come into contact with MMFD policy structures would be beneficial in developing further policy improvements. This includes in the four other sub-systems that now offer MMFD training routes, given that CONALEP and the technical professional stream within upper secondary education may generate distinct institutional conditions and student body profiles (see section 1.3).

Finally, this doctoral research project has sought to highlight and valorise young people's role in how dVET policies function. Findings presented in this thesis point to the misunderstandings and risks generated by the common omission of their perspective as policy stakeholders. I would therefore advocate for future research and policy activity that pays attention to the lives and desires of young people as the embodied protagonists of dVET, particularly in LMIC contexts where youth perspectives are often less explored (Batan et al., 2020). Their contributions will only strengthen our understanding and expand the possible ameliorative contributions of efforts in TVET policymaking.

Appendices

Appendix 1. Wave one interview schedule

A) Socioeconomic and cultural background information

a) Contact data
b) Other languages besides Spanish
c) Place of birth/rural/urban migrant status
d) What do your parents/family do?
e) Who do you live with and what do they do? What is their highest qualification?
f) Qualifications prior to the MMFD

B) Reasons for MMFD participation

1. Why did you decide to join CONALEP?

a) What do you think was the most important reason why you decided to join CONALEP?
b) Why did you choose your specialism at CONALEP?
c) Did you ever consider going to another high school?
d) Who do you think influenced you to decide to enter CONALEP?
e) Do you have friends or relatives who have studied at CONALEP? Do you think that influenced your choice in any way?

2. Why did you decide to enter the Dual Model?

a) How and where did you first learn about the MMFD? Who influenced your decision to join the dual model?
b) What were your main reasons for deciding to join the MMFD?
c) How was your selection process for the MMFD?
d) Did you manage to get a place with the company you wanted? How many others were selected?
e) Do you think that all students have the same opportunity to be selected?
f) Would you say that you faced any barriers / discrimination during the selection process?

C) Training experiences

3. How is your learning/training experience at CONALEP?

Content of teaching in CONALEP prior to dual

a) Thinking about your training prior to dual, what kind of skills did they teach you at the campus?
b) Would you say these skills were primarily transferable or job specific?

Content of CONALEP's teaching during dual

a) In what semester did you start the dual program?
b) What is the format/length of this teaching? What do you think of this teaching format?
c) What is your opinion of the educational environment? Have you faced any particular challenges?
d) Do you feel you have enough opportunities to receive feedback or ask questions?

e) Thinking about your training at CONALEP after the beginning of the program, what kind of skills did they teach you? Do you apply these in the company?
f) Would you say these skills are mostly transferable or job specific?
g) Which of the following employability skills do you consider to be more present in CONALEP's teaching?: Critical thinking, problem solving, communication, teamwork and leadership skills. In what way?
h) Are you trained in traditional workplace skills (punctuality, cleanliness, and discipline)? How?
i) What do you think of the facilities available at CONALEP?
j) Would you say that CONALEP provided you with guidance on your rights as an apprentice, on safety in the workplace, and on what to do in cases of sexual or other types of harassment?

Personal relationships

a) How is the relationship between dual and school-based students?
b) What do school-based students think of dual students?
c) How is your relationship with the tutors? Have they supported you with a problem in the company?

4. How is your learning/training experience in the company?

Practical details
a) What do you remember from your first days in the company?
b) How many apprentices are there in your company? Male/female ratio? Past generations?
c) Do you receive formal training/teaching in the company?

Teaching content
a) What kind of skills are you being taught in the company?
b) Would you say these skills are mostly transferable or job specific?
c) Which of the following employability skills would you say the company expects more of you? Critical thinking, problem solving, communication, teamwork, and leadership skills.
d) Would you say that attending the company has given you important work values?
e) Did the company talk to you about labour laws, workplace safety, sexual or other harassment? Are you confident in reporting such a problem?
f) Have you heard of the German/'Don Bosco' certification exam? Are you going to sit it? Why?

Inclusion/barriers
a) Do you feel included in the training activities and in the wider work environment?
b) What was the most difficult or challenging thing to adapt to the company? Have you faced any challenges?
c) Do you feel you have enough opportunities to get feedback or ask questions?
d) How is the relationship between apprentices and other workers in the company?
e) How is your relationship with supervisors / instructors?

Practical/economic resources
a) What is the distance between your home and the company? How do you get there? How much does it cost?
b) What kind of facilities are available in the company?
c) Do you receive any additional financial support besides the scholarship? How much?

d) How much is the scholarship you receive? Do you receive the Benito Juárez scholarship? Have you ever experienced delays in your scholarship payments? What was the impact of these delays?

D) Professional expectations

5. Based on your experience in the Dual Model, what are your professional expectations for the next 2-3 years?

a) Do your expectations match your study program and/or available employment opportunities?
b) Do you think that the Dual Model has improved your prospects in the job market? How?
c) Do you think that your participation in the Dual Model helped you to be a better student/worker? In what ways?
d) Have you experienced an increase in self-esteem/confidence after participating in the MMFD?
e) Do you expect to receive a job offer from your current company? Would you accept? Why? Do you already have an idea of the salary they offer?
f) Are there more dual learning opportunities available after the MMFD? Would you consider joining?
g) How have your professional expectations changed during the MMFD?
h) How do your career possibilities compare to those of your parents/family?
i) How do your income expectations compare to those of your parents/family?
j) What are your job prospects compared to those in school-based training?

6. What recommendations do you have to improve the MMFD?

E) Future life plans

7. Where do you expect to see yourself 3 years after finishing your dual training?

a) Are you interested in working in a regular salaried job? Do you have any plans to start your own business?
b) Are you interested in continuing to study? What kind of studies?
c) Did you already plan to study at university before starting the MMFD?
d) What do you think you have to do in order to achieve those goals?
e) What possible difficulties do you think you might face in getting a job/getting into university?
f) Do you have marriage/family plans?
g) What do you plan to do with your first month's salary in a new position?

Appendix 2. Wave two interview schedule

A) Socio-economic and cultural background Information

- Have there been any significant changes in your personal circumstances since the last time we met?

B) Current employment experience

1. What is your current status? Are working/in further study/both/neither?
IF IN EMPLOYMENT

2a. Describe how you got your current job?
- Is your current company the same or different from your MMFD company?
- Were you hired internally or through interview?
- What options were available to you after training? What was the reason(s) for choosing the current option?
- What challenges did you experience in finding employment after completion?
- Was the MMFD helpful in finding a job?

3a. Do you think your expectations/aspirations as an MMFD student are fulfilled in your current job, in terms of…
- …career prospects?
- …higher wages?
- …job satisfaction?
- …family life?
- …social prestige?

IF IN FURTHER STUDY

2b. Describe how you got your place in university/further study.
- Did you work at all before continuing to study? If so, was this in the same company as your MMFD, a different company or informal/non-related?
- What was the selection process?
- What options were available to you after training? What was the reason(s) for choosing current option?
- What challenges did you experience when applying for further study after completion?
- Was the MMFD helpful in finding a university place?

3b. Do you think your expectations/aspirations as an MMFD student are fulfilled in further education, in terms of…
- …career prospects?
- …prospect of higher wages?
- …personal/intellectual satisfaction?
- …practical application?
- …family life?
- …social prestige?

IF NEITHER

2c. What options were available to you after training? Why are you neither in work nor further study? Was this a deliberate choice? If so, why? If not, what challenges have you experienced?

3c. What role did the MMFD play in your current status? Did it improve or worsen your opportunities for further study/employment? How?

**IF BOTH, SEE 2a+b, 3a+b, PLUS…*

ExI. Are there any particular challenges/advantages of combining work and study?
ExII. Why did this feel like the best route for you after the MMFD? How does the combined experience relate to the MMFD?

ALL

4. Has the Covid-19 pandemic impacted your experiences/possibilities in any way we last spoke?

C) Professional expectations

5. What are your professional expectations for the next 2-3 years? How do these compare to the last time we spoke (here can remind student of their previous responses)?
   - What are the reasons for any changes in your plans?
   - Do your plans correspond with your programme of study and/or available employment opportunities?
   - What possibilities do you think you have/plans do you have for improving your professional prospects?
   - Have you noticed any difference in your current prospects/possibilities compared to non-MMFD students?

D) Training experiences

6. Now that you have graduated, do you think that the training you received at CONALEP was relevant? In what ways? Looking back are there any particular challenges you experienced?
7. Now that you have graduated, do you think that the training you received in the company was relevant? In what ways? Looking back are there any particular challenges you experienced?
8. Do you think that the programme has made you a better student/worker? In what ways?
9. Looking back now you have graduated do you have any recommendations for improving the MMFD programme?

E) Future life plans

10. Where would like to see yourself in 3 years? How does this compare with your aspirations when we last met? (can remind of responses from previous interview)
   - Has your attitude to/plans for employment changed since we last spoke? How?
   - Has your attitude to/plans for study changed since we last spoke? How?
   - Has the pathway to achieving your goals altered since we last spoke? How?
   - Have your plans for marriage/family changed since we last spoke?
   - **If they have begun working:* what did you do with your first month's salary in a new role?

Appendix 3. Wave three interview schedule

A) Daily life, present and future

1. Tell me about your current circumstances (personal and professional)
    a. Are you working/studying/other?
    b. How have your circumstances changed since we last spoke?
    c. Have your living arrangements changed since we last spoke?
    d. What are the reasons for any of these changes?

2. Tell me about a typical day for you.
    a. How do you spend your time?
    b. What do you spend money on?
    c. Probe clashing priorities

3. What are you most satisfied with about your current circumstances? Why?

4. What are you most dissatisfied with about your current circumstances? Why?

5. What are your plans for the next 3-5 years? How and for what reason have these changed since we last spoke?
    a. Work
    b. Education
    c. Family life
    d. Travel/migration
    e. Money/income

6. In a similar timeframe, what do you think a typical day will look like for you in the future?
    a. How will you spend your time?
    b. What will you spend your money on?
    c. Probe clashing priorities

B) MMFD participation

7. Looking back, what were the biggest benefits and sacrifices of MMFD participation? Why?

8. What role do you think MMFD participation has played in your current circumstances?
    a. What skills did it develop/not develop?
    b. What knowledge did it develop/not develop?
    c. What connections or information did it provide/not provide?
    d. What role has the qualification played?
    e. Did it lead directly to certain opportunities (e.g. employment)?
    f. What role did it play in helping you to understand what you are and are not interested in?

9. What role do you think MMFD participation has played in the development of your future plans?
    g. How has it impacted your aspirations/expectations for your future?
    h. How has it prepared you, or not prepared you, for your future plans?

   i. Did participation make you aware of opportunities/possibilities/pathways that you weren't previously aware of?
   j. What role did it play in helping you make choices about your future?

10. What changes to the MMFD might have helped to improve your current circumstances and/or better support your plans for the future?

C) Covid-19

11. What has been the impact of Covid-19 on your life since we last spoke?
    a. Health
    b. Economic
    c. Employment/education
    d. Family/social life

12. What impact do you think the Covid pandemic will have on your future plans?
    e. Educational choices
    f. Employment opportunities
    g. Economic circumstances
    h. Personal health
    i. Family life/caring responsibilities
    j. Travel/migration

D) Personal background

13. What role do you think your personal background has played in your current circumstances? How might it impact your plans for the future?
    k. Gender
    l. Family economics
    m. Migration experience
    n. Health

E) Transitions

14. Looking back, are you happy with the choices you have made since you first joined the MMFD? Is there anything you would do differently? Why/why not?
15. How able to do you feel to achieve your future plans? Why? To what extent do you feel in control of your future?
16. What have been the biggest challenges of your transition from the MMFD into adulthood? Why?
17. What have been the most enjoyable aspects of your transition from the MMFD into adulthood? Why?
18. Is there anything else you would like to ask or tell me about the themes we have discussed today?

Appendix 4. Plain language statement

***Title**: Exploring young people's post-MMFD transitions in Coahuila, Mexico*
***Researcher**: Ellen Vanderhoven*
***Supervisors:** Dr Oscar Valiente, Prof Mhairi Mackenzie, Dr Srabani Maitra*
***Course:** PhD Education*

You are being invited to take part in a research study about the Modelo Méxicano de Formación Dual (MMFD) programme in Coahuila, Mexico.

Before you decide to take part in this research project, it is important for you to understand why the research is being done and what it will involve. Please ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. You can discuss it with others if you wish.

1. Why have I been chosen?

You are being asked to take part in this research project because you have graduated from a dual apprenticeship programme and have previously participated in a related research project. I am interested in learning more about your post-graduation experiences.

2. What is the purpose of the study?

The aim of this research project is to learn about how to strengthen the MMFD in Mexico. You may know that Germany has a strong dual apprenticeship model of education. It has been suggested that this type of model can bring a number of benefits to countries such as Mexico. In this research, I want to learn more about what it is like to be an MMFD apprentice and what impact participation has had on your life choices and plans. From this, I hope to learn more about what outcomes the dual apprenticeship model can achieve in different contexts.

3. What will happen if I take part?

If you decide to participate in this research, you will be asked some questions about your current life and your plans for the future; your views on MMFD participation; your personal background; the impact of Covid-19 on your life path; and the process of transitioning from the MMFD into your current circumstances. Our Zoom conversation will be audio and video recorded so that afterwards I can listen carefully to what was said. I will be finished gathering data by October 2022.

Your participation is entirely voluntary. You can stop your participation at any time. After the interview, if you do not wish for your information to be used in the research, it will be erased.

4. Will the information that I give you in this study be kept confidential?

When I write about what I have found, your name will not be mentioned, so that your information remains confidential. You may choose a pseudonym which I will use when writing up the final assignment. This is for the protection of your identity. However, if during our conversation I hear anything which makes me worried that you might be in danger of harm, I might have to inform relevant agencies of this.

All the information I collect in the interview will be used only for purposes related to research. All the information, including the recordings of interviews, will be stored securely and protected by a password. All the information will be saved on password-protected computers at the University of Glasgow for a period of ten years.

Because the information I collect may be useful for further research, other researchers and policy-makers may also use it. But they will only be able to use information that is anonymized. That is, they will only be able use information which does not identify individual persons.

This project is funded by the Economic and Social Research Council (ESRC) UK. After the project is completed, ESRC wants a copy of the information I collect to be stored as part of the UK Data Archive. Again, I will ensure that the information I share is anonymized (that is, no individual person can be identified based on the shared information).

After the project is completed, all personal information that can be used to identify those who participated in the research project will be erased or destroyed.

5. What will happen to the results of this study

I will analyse the data I collect from participants, and present this in my final PhD thesis and academic journal articles. All participants will receive a written summary of the findings and I will also present the information to colleagues.

7. Who has reviewed the study?

This research project has been approved by the College Research Ethics Committee.

8. Who can I contact for further Information?

If you have any more questions, you can ask me (e.vanderhoven.1@research.gla.ac.uk) or my supervisor Dr Oscar Valiente (Oscar.Valiente@glasgow.ac.uk) or the Ethics officer for the School of Education, Dr Muir Houston (Muir.Houston@glasgow.ac.uk)

Thank you for reading this.

____________________End of Plain Language Statement____________________

Appendix 5. Participant consent form

Title: Exploring young people's post-MMFD transitions in Coahuila, Mexico
Researcher: Ellen Vanderhoven
Supervisors: Dr Oscar Valiente, Prof Mhairi Mackenzie, Dr Srabani Maitra

PLEASE TICK THE BOXES BELOW TO CONFIRM YOUR CONSENT TO PARTICIPATE

☐ I confirm that I have read and understood the Plain Language Statement for the above study and I have had the opportunity to ask questions.

☐ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

☐ I consent to interviews being audio- and video-recorded.

☐ I acknowledge that I will be referred to by a pseudonym.

☐ I acknowledge the provision of a Privacy Notice in relation to this research project.

- All names and other material likely to identify individuals will be anonymised.
- The material will be treated as confidential and kept in secure storage at all times.
- The material will be retained in secure electronic storage for use in future academic research.
- The material may be used in future publications, both print and online.
- I agree to waive my copyright to any data collected as part of this project.
- I understand that other authenticated researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.
- I understand that other authenticated researchers may use my anonymized words in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.

I agree to take part in this research study. ☐

I do not agree to take part in this research study. ☐

Name of Participant: ……………………………………….. Signature (please type): ………………………………………..

Date …………………………………

Name of Researcher: ……………………………………….. Signature: ………………………………………..

Date …………………………………

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