

It's All About Quality Time: Systemic Hurdles in Continuing Education among Night-Shift Food Delivery Riders in China

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Abstract

This article examines how night-shift food delivery riders in Hangzhou, China, experience continuing education while working under algorithmically organised platform labour. Based on eight months of critical research fieldwork, including 380 hours of observation across 47 night shifts and 28 interviews with 22 riders, the study argues that educational marginalisation is not adequately explained by a general shortage of time. Riders often had fragments of clock time, but much of that time could not be used for learning because it was interrupted by orders, difficult to plan, out of step with educational institutions, or they were physically exhausted by night work. The article develops the concept of educational time poverty to describe the condition in which formal educational opportunities exist but cannot be converted into sustained learning capability. Bringing Sen's capability approach into dialogue with Lefebvre's rhythmanalysis, the study shows how platform rhythms, bodily recovery, family care, income pressure, and institutional schedules interact to shape adult learning. Riders understood education in several overlapping ways: as a route out of delivery work, as a postponed possibility, as a test of self-discipline, as a risky investment, and as a promise blocked by structural conditions. The article contributes to adult



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education research by shifting attention from access alone to the temporal conditions that make access usable.

Keywords: adult education; educational time poverty; platform labour; night-shift food delivery riders

Introduction

Lifelong learning has become a central expectation in contemporary labour markets. Adults are increasingly asked to update skills, accumulate credentials, and remain adaptable as employment becomes more uncertain. Policy documents often present continuing education as both a right and a route to mobility. In that language, learning appears as a resource that can help workers respond to technological change, job instability, and changing employer demands. Yet the existence of adult learning opportunities does not mean that adults can use them on meaningful terms. Participation in adult education remains uneven, and lack of time due to work and family responsibilities continues to be one of the most common barriers reported across countries (Boeren 2016; OECD 2025; UNESCO 2022). Recent studies have pushed the field away from simple explanations based on motivation, showing instead that adult participation is shaped by perceptions of opportunity, labour-market position, gendered responsibilities, institutional arrangements, and life-course conditions (Heuer, Serratos-Sotelo, and Motel-Klingebiel 2025; Ingelsrud and Dahl 2025; Järvensivu, Ryky, and Vuorento 2025; Karger, Kalenda, and Vaculíková 2025).

This article takes this problem into the world of night-shift food delivery riders. Platform delivery work is often described as flexible because riders can choose when to log in and where to wait for orders. The riders in this study did have moments of discretion. Some decided to work more on rainy nights; others waited near hospitals or late-night restaurants, and a few tried to reserve quieter hours for online lessons. But their work was also shaped by algorithmic dispatch, delivery-time calculations, customer ratings, dynamic subsidies, and penalties. These systems did not only organise how riders earned money. They also organised when they could rest, whether they could plan a day, and what kind of attention remained available after work. For night-shift riders, the issue was not simply whether they valued education. It was whether the time produced by their work could be converted into learning time.

Hangzhou provides a revealing setting for this question. The city has a mature digital economy, a dense night-time service sector, and a developed adult education infrastructure that includes open-university provision, adult higher education, self-study examinations, short vocational courses, and online certificate programmes. It also has a large delivery workforce serving late-night consumption in commercial districts, university areas, hospitals, and residential neighbourhoods. The coexistence of educational provision and intensive platform labour makes the city a useful site for examining a broader tension: Adults may be invited to engage in lifelong learning at the

same time as their employment erodes the temporal conditions on which learning depends.

The article asks three questions. First, how do the labour rhythms of night-shift food delivery shape riders' ability to identify, enter, and sustain continuing education? Second, how do temporal, bodily, social, and institutional conditions mediate the conversion of formal educational opportunities into substantive learning capability? Third, how do riders understand continuing education in relation to work, mobility, and inequality? In addressing these questions, the article develops the concept of educational time poverty. We use this term to refer to a situation in which people formally possess educational opportunities but lack time that is stable, recoverable, and institutionally usable enough to support learning. The concept does not mean that people have no hours available to them at all. It means that the hours they have are too broken, unpredictable, misaligned, or depleted to become educationally meaningful.

The contribution is threefold. Empirically, the article foregrounds platform workers as adult learners, a perspective that remains underdeveloped in labour literature. Theoretically, it links the capability approach with rhythm analysis to show how educational exclusion can be produced through the temporal organisation of work and everyday life. Analytically, it refines the broad claim that adults lack time by distinguishing four forms of educationally unusable time: fragmented time, unpredictable time, institutionally misaligned time, and depleted time. These categories are not presented as separate boxes into which riders' lives neatly fit. In practice, they overlapped. A rider could be physically depleted in the afternoon after work or interrupted by childcare, and their spare time can simultaneously be poorly aligned with an administrative deadline. The distinction is useful because it makes visible the different ways in which time becomes unusable for learning.

Literature Review and Theoretical Framework

Platform Labour, Algorithmic Management, and Night Work

Research on platform labour has shown that digital platforms reorganise work through data systems, customer-facing applications (apps), and algorithmic forms of management. In food delivery, platforms allocate orders, calculate estimated delivery times, monitor location, rank performance, and adjust incentives in real time. Although this arrangement is often framed as flexible, empirical studies have emphasised that platform workers can be subject to opaque forms of control and strong pressure to remain available when demand is high (Duggan et al. 2020; Galière 2020; Kellogg, Valentine, and Christin 2020; Wood et al. 2019). Huang's study of food delivery platforms in China, for example, shows how algorithmic systems shape both the virtual organisation of labour and the labour process itself (Huang 2023). Won, Lee, and Lee (2023) similarly emphasise that food-delivery workers' experience of flexibility is tied to their dependence on algorithmic decisions.

A growing body of work has also examined the health and risk consequences of algorithmic management. Studies have linked digital platform control with mental well-being risks, burnout, and risky delivery behaviour among riders (Cheng et al. 2024; Dong, Zhang, and Wu 2025; Liu, Yang, and Liu 2025). These studies matter for education because learning requires not only access to materials but also attention, bodily recovery, and some ability to plan. When work accelerates and rest becomes unstable, education may be affected even when the worker is not formally excluded from any course.

The temporal dimension becomes particularly visible at night. Night work is not merely day work moved to later hours. It reorganises sleep, family interaction, institutional access, and bodily rhythm. Riders in this study worked mostly between 22:00 and 06:00. Their busiest hours did not always match standard office hours, school hours, or course schedules. A rider might finish work at sunrise, sleep through the morning, wake to pick up a child, and then leave again before an evening live class ended. Recent educational work has begun to treat time not as neutral clock time but as a social relation that privileges some learners while disadvantaging others (Davies 2025; Hartong, Decuyper, and Lewis 2025; Shahjahan and Bano 2025). This perspective is important for understanding riders not only as labouring subjects but also as learners whose educational futures are shaped by the rhythms of platform work.

Continuing Education and the Limits of Barrier-Based Accounts

Adult education scholarship has long recognised that participation is socially unequal. Cross's (1981) classic model distinguished situational, institutional, and dispositional barriers. That framework remains useful because it prevents non-participation from being reduced to a lack of interest. Rubenson and Desjardins (2009) later developed a bounded agency approach, arguing that adults make learning decisions within welfare, labour-market, and institutional contexts. More recent research has further complicated the concept of participation by showing that adults move in and out of learning over time, interpret opportunities differently, and face layered constraints related to gender, employment, and institutional design (Heuer, Serratos-Sotelo, and Motel-Klingebiel 2025; Ingelsrud and Dahl 2025; Kalenda, Vaculíková, and Kočvarová 2024; Karger, Kalenda, and Vaculíková 2025).

Despite these advances, time is still often treated as one obstacle among others. It is typically listed under situational barriers, alongside work, family responsibility, or cost. That classification is not wrong, but it can flatten important differences. A person may have 30 minutes between two orders, a free morning after a night shift, or an online course that can technically be opened at any hour. These situations all involve time, yet they do not offer the same educational possibility. A fragmented interval may not support concentration. A free morning may be unusable because the body needs sleep. An online course may still require weekly check-ins, fixed assessment windows, or daytime administrative procedures. Distance learning can reduce travel and improve access for some adult learners, especially when course design is structured and

supportive (Åkerfeldt, Bergdahl, and Hrastinski 2024; Wladis, Hachey, and Conway 2023). But online access does not remove the need for stable attention, predictable planning, and recoverable energy.

This article builds on participatory research but shifts attention from the presence of barriers to the organisation of usable time. The question is not only whether a rider has hours away from paid work. The question is whether those hours can be protected, connected, and recognised by educational institutions. This shift matters because policy solutions that focus only on increasing course supply may leave intact the temporal conditions that prevent adults from using what is supplied.

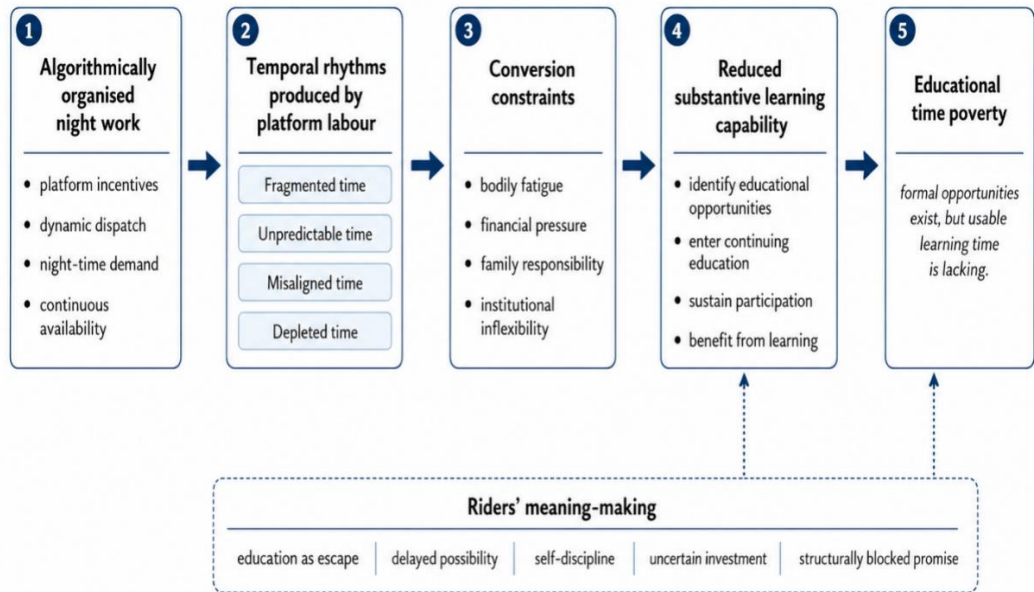
Capability, Rhythm, and Educational Time Poverty

The capability approach provides a useful language for this problem. Sen (1999) argues that justice should be assessed not only by the resources people possess but by what they are substantively able to do and become. Nussbaum (2011) similarly emphasises real opportunities rather than formal entitlements alone. In educational research, this distinction helps separate formal access from real freedom to learn. A course, a smartphone, and an enrolment pathway are resources. They become meaningful only when people can convert them into learning, confidence, credentials, or new forms of participation. Recent capability-oriented studies of adult education, refugee livelihoods, community learning, and course design show the value of asking whether educational provision expands learners' actual capabilities rather than merely increasing formal options (Dagar 2024; Foley and Ollis 2024; Murray 2024).

Capability theory, however, often treats time as one conversion factor among others or leaves its social production implicit. Lefebvre's rhythmanalysis helps fill this gap. For Lefebvre (2004), everyday life is organised through interacting bodily, social, institutional, and economic rhythms. These rhythms can align or clash. When they align, action becomes easier; when they clash, life becomes arrhythmic. In the case examined here, riders' platform rhythms were shaped by order alerts, bonus windows, deadlines, and customer demand. Their bodily rhythms were shaped by sleep disruption and fatigue. Domestic rhythms included childcare, meals, school pickup, and remittances. Educational rhythms included registration dates, live classes, examinations, and administrative opening hours. Educational time poverty emerged where these rhythms repeatedly failed to align.

Educational time poverty names the condition in which formal learning opportunities remain difficult to use because the time available to learners is unstable, interruptible, institutionally mismatched, or physiologically depleted. It is related to general discussions of time poverty, but it focuses specifically on the conversion of opportunity into learning capability. The term also highlights that time is not merely private. It is organised through labour regimes, household responsibilities, and institutional assumptions about the normal learner. In this article, rhythmanalysis explains how unequal time is produced, while the capability approach explains why this temporal

production matters for educational justice. The two perspectives are therefore used here in an integrated rather than merely parallel way. Rhythmanalysis identifies how learning time is socially produced through the interaction of platform, bodily, domestic, and institutional rhythms; the capability approach then asks whether such time can be converted into real educational freedom. Educational time poverty names the point at which this conversion fails. It differs from situational barrier accounts because it does not treat time as one obstacle among many, but examines how time itself is organised and made unusable. It differs from general time poverty because the issue is not only having too few hours, but whether available hours are continuous, predictable, aligned, and recoverable enough to support learning. It also extends bounded agency by specifying the temporal mechanism through which agency is constrained. In this sense, educational time poverty makes visible a form of exclusion that can persist even when courses, devices, and formal access are present. Figure 1 summarises the conceptual framework guiding the study.



Analytical roles: Rhythmanalysis explains the production of temporal rhythms; the Capability Approach explains conversion into learning capability; Critical Pedagogy informs the interpretation of riders' meaning-making.

Figure 1: Conceptual framework of educational time poverty among night-shift food delivery riders

Methodology

Research Design and Site

The study used a field-based design. Critical research was appropriate because the aim was not only to describe riders' learning choices but also to examine how unequal

relations were reproduced through platform labour, educational institutions, and moral discourses of self-improvement (Carspecken 1996). We did not begin with the assumption that non-participation reflected individual indifference. Instead, the fieldwork followed the practical conditions under which riders tried, postponed, or rejected continuing education.

Fieldwork was conducted in Hangzhou, Zhejiang Province, from March to October 2024. Observation took place in commercial districts, late-night restaurant areas, charging stations, convenience stores, roadside rest points, residential neighbourhoods, and pickup locations near hospitals and university areas. Night delivery demand was often concentrated between 22:00 and 24:00 and again between 01:00 and 03:00, although rain, promotions, weekends, and platform subsidies could change the pattern quickly. Riders described these changes as part of the ordinary uncertainty of the job. A planned early finish could become another two hours of work if an incentive appeared shortly before 03:00. Conversely, a rider who expected a busy night could wait by a charging station for half an hour without a profitable order.

Hangzhou was selected because it combines a strong platform economy with a relatively rich adult education environment. Riders mentioned adult degree programmes, online courses, accounting and electrician certificates, self-study examinations, and short vocational training. Some had searched for programmes on their phones while waiting for orders. Others had registered and then stopped. The site allowed the study to examine a specific contradiction: Educational routes were visible, but visibility did not guarantee use.

Participants and Data

Night-shift riders were defined as platform-based delivery workers who worked at least four nights per week, with main working hours between 22:00 and 06:00, and who regarded night work as routine rather than occasional. Participants were recruited through purposive sampling, supplemented by snowball referrals, at rider gathering points, charging stations, convenience stores, pickup sites, and WeChat rider groups. Recruitment intentionally included riders with different relationships to continuing education: Four were studying at the time of fieldwork or had recently completed a course; nine had attempted and discontinued study; six wanted to study but had not started; and three expressed no clear interest.

The final sample consisted of 22 riders: 18 men and four women, aged 24 to 45, with a mean age of 32. Sixteen were migrants from other provinces and six were local or intra-provincial workers. Nine had junior secondary education or below; 10 had completed senior secondary or vocational schooling; and three had college-level qualifications or above. Fourteen had childcare responsibilities, including 10 with preschool- or primary-school-aged children. Fifteen worked full time and seven part time. Delivery experience ranged from three months to six years.

Data were generated through approximately 380 hours of participant observation across 47 night shifts, usually from 21:30 to 06:30. In practice, observation involved several forms of accompaniment. On some nights, we waited with riders at charging stations, late-night restaurants, convenience stores, and roadside rest points while they monitored the app and discussed work or study. On other nights, we followed riders through parts of their delivery routes, including pickup points, short waiting periods, and return stops, while avoiding interference with order acceptance, route choice, or customer interaction. Because active delivery involved road risk and time pressure, conversations during delivery were kept brief, and more detailed discussion usually took place during waiting periods or after orders had been completed. Fieldnotes were recorded through brief timestamped jottings on a phone during the night and expanded into full notes after each shift, usually before the researchers rested. With consent, we accompanied 12 riders during parts of their shifts, without advising on order acceptance or interfering with delivery work. We also conducted 28 semi-structured interviews with 22 riders, including four follow-up interviews used to clarify emerging themes. Interviews lasted 45 to 90 minutes and were audio-recorded with consent. Informal conversations were recorded in fieldnotes after the interaction when direct recording would have been intrusive. In addition to interviews, we noted the timing of waiting periods, how riders used phones during short breaks, and the practical interruptions that occurred when they tried to watch lessons, check course information, or discuss education during work.

Table 1: Participant characteristics

Characteristic	Category	<i>N</i>
Gender	Male / female	18 / 4
Age	24–30 / 31–40 / 41–45	9 / 10 / 3
Hukou / migration status	Local or intra-provincial / inter-provincial migrant	6 / 16
Highest education	Junior secondary or below / senior secondary or vocational / college+	9 / 10 / 3
Family responsibility	With childcare responsibility / without	14 / 8
Employment status	Full-time / part-time	15 / 7
Delivery experience	<1 year / 1–3 years / >3 years	7 / 11 / 4
Continuing education relation	Currently studying / discontinued / interested but not started / no clear interest	4 / 9 / 6 / 3

Analysis, Reflexivity, and Ethics

Analysis followed an iterative thematic process that combined inductive coding with theoretically informed interpretation. Early codes included interrupted waiting time, subsidy-induced extension of shifts, reversed sleep cycles, bodily fatigue, registration conflicts, income anxiety, self-blaming narratives, and algorithmic control. Focused coding grouped these into broader categories: fragmented time, unpredictable time, misaligned time, depleted time, conversion constraints, and educational meaning-

making. The concept of educational time poverty emerged gradually. Riders often began by saying that they had no time. Fieldnotes and repeated interviews showed that the problem was more specific: They sometimes had time, but it was the wrong kind of time for learning.

Negative cases were examined throughout the analysis. Several riders did sustain study for a period, and one completed an accounting certificate. These cases were important because they showed that platform work did not make learning impossible in every case. They also clarified the conditions under which learning became more feasible: Savings, household support, prior confidence in formal study, fewer care demands, and courses that were genuinely asynchronous supported learning. These exceptions helped avoid treating riders as passive victims and made the analysis more precise.

The researchers maintained analytic memos, a reflexive journal, and an audit trail. Reflexive notes also considered how the researchers' presence might have shaped riders' behaviour. During the first encounters, several riders explained their work in a more formal way or showed study-related apps after education was mentioned. Over repeated observations, however, interactions became more ordinary: Riders checked orders, complained about subsidies, rested, ate, or ignored the researchers while waiting for dispatch. We treated this process not as evidence that observation was neutral, but as a reminder that field relations were gradually negotiated. Claims about education were therefore interpreted alongside observed routines rather than taken only as interview statements. Preliminary findings were discussed with five participants to test resonance and identify blind spots. Participation was voluntary and based on informed consent. Pseudonyms and rider codes are used throughout, and identifying details about individuals, routes, and platforms have been removed or altered. Shadowing was conducted only when riders judged that it would not compromise earnings, safety, or platform standing. Because night delivery involves road risk, the researchers did not accompany riders in ways that would distract them during active delivery.

Findings

Algorithmic Night Rhythms and Educationally Unusable Time

Riders' accounts showed that educational difficulty was not simply a matter of having too few hours. Four forms of time repeatedly appeared in the data: fragmented time, unpredictable time, institutionally misaligned time, and depleted time. These forms were produced through the interaction of algorithmic dispatch, night work, bodily recovery, household obligations, and educational schedules.

Fragmented time was most visible during waiting periods. At first sight, waiting looked like an opportunity for study. Riders sometimes stood near a charging station for 10 or 15 minutes, scrolled through short videos, checked messages, or opened an online course. Yet these intervals were not quiet study periods. Riders had to keep one eye on the app, listen for order alerts, watch battery levels, and remain ready to move. R07, a

29-year-old rider, described this as trying to read while someone kept tapping his shoulder: “I can open the PDF, but maybe I read two pages and then an order comes. After I return, I forget where I stopped. Sometimes I open it again and just close it.” R12 tried listening to an online accounting lesson near a charging station because the signal was stable there. He said the lesson was interrupted so often that it felt like “hearing pieces, not learning”.

Field observations supported these accounts. At 02:40 on 15 July, a rider in the Hubin commercial district opened an accounting-certification app while leaning against his electric bike. Less than six minutes later, a high-subsidy order appeared. He looked at the amount, locked the phone, put on his helmet, and left. When we met again later that night, he laughed and said that the course was still at the same video after two weeks. The point is not that riders never used waiting time. Some did. The point is that such time rarely allowed continuity. It was more suitable for checking a message than for entering a demanding learning task.

Unpredictable time emerged from fluctuating order volumes, weather, incentive windows, and platform prompts. Riders often made informal plans to finish at a certain hour, but those plans could change when the app displayed a temporary bonus. R03, aged 28, described planning to stop before 03:00 and then continuing when a subsidy appeared at 02:30: “Can I really refuse it? Maybe tomorrow is quiet. My child has school fees. So I run a few more orders, and the next day I cannot get up.” R18 had tried to reserve Tuesday nights for study but repeatedly abandoned the plan when demand was high. He did not present this as a dramatic failure. It was simply how income was made: “If Tuesday is busy, Tuesday becomes work.”

Unpredictability also affected course entry. Riders missed registration windows, delayed document submission, or failed to attend orientation sessions because they could not confidently protect the relevant time. One rider had planned to register for a vocational certificate during the afternoon after a night shift. He woke late, found that the office had closed early for a holiday arrangement, and did not try again for several weeks. The barrier was not distance alone. It was the difficulty of aligning unstable work, sleep, and administrative time.

Misaligned time referred to the clash between nocturnal work rhythms and the daytime assumptions embedded in educational provision. R04, aged 37, noted that consultations, printed forms, tutoring sessions, and examinations were usually arranged during daytime hours: “They say adult education is flexible, but the people who arrange it live in daytime. I sleep in daytime. If I do not sleep, riding at night is dangerous.” R11, a 41-year-old rider, explained that self-study examinations required a sequence of tasks: checking notices, printing an admission ticket, attending a daytime examination, and sometimes joining pre-examination tutoring. Each task was small, but the chain was difficult to sustain after months of night shifts.

Misalignment was also social. Riders' work synchronised with late-night consumption but desynchronised from family and institutions. A rider could be busiest when his child was asleep, sleeping when a training office was open, and preparing for work when a live online class began. Programme flexibility helped when materials were fully asynchronous and deadlines were generous. But several courses that were advertised as flexible still required attendance, weekly check-ins, or fixed assessment windows. Riders experienced such requirements as evidence that institutions imagined a learner with more regular days.

Depleted time referred to hours that existed on the clock but were physiologically difficult to use. After a night shift, riders often returned home between 06:00 and 07:00. Some tried to study before sleeping, but concentration collapsed quickly. R06, a 29-year-old mother, said: "When I get home, my head is empty. I open the course and watch ten minutes. Then I sleep, and after I wake up I remember almost nothing." R14 described slower reaction and poor memory after several nights of continuous work: "Before, I could read half an hour. Now after twenty minutes my eyes are heavy."

Depletion matters because adult learning is not only attendance. It requires memory, attention, and the ability to return to a topic. Riders repeatedly distinguished between having a free hour and having a usable hour. Some could open videos while eating breakfast after work, but they described the activity as keeping a promise to themselves rather than actually learning. One observation made this problem especially clear. After a long night, a rider opened a short online lesson while sitting outside a convenience store after dawn. The video was less than eight minutes long, but he replayed the same section three times because he kept losing the thread of the explanation. After the third replay, he put the phone face down and closed his eyes for several minutes. When asked later whether the lesson was useful, he said that he had "watched it", but had not really "taken it in". The episode showed that depleted time was not empty time waiting to be filled by stronger motivation. It was time in which the body was present but attention and memory were already exhausted. This distinction was central to the study. Educational time poverty was not measured only by the number of hours unavailable. It was visible in the erosion of the quality of time that remained.

From Formal Opportunity to Constrained Learning Capability

The second finding concerns the conversion of formal opportunities into substantive learning capability. Riders were not unaware of educational options. Many knew of adult degree programmes, vocational certificates, short online courses, or self-study examination pathways. Some had saved links on their phones. Others had paid for inexpensive online courses. Yet awareness and access did not automatically become participation.

Income pressure was the most immediate constraint. For full-time riders, night work was not simply supplementary income. Rent, children's expenses, debt repayment, and remittances depended on order volume and incentive periods. R03 calculated that taking

one night off for an examination could mean losing 350 to 500 yuan, sometimes more if a bonus was missed. R08 considered an electrician certificate but estimated that attendance and preparation would cost more than 1,000 yuan in lost earnings. He did not say the certificate was useless. He said that the household needed money first. The opportunity cost of study was therefore not abstract. It was felt as food, rent, school fees, and the ability to handle emergencies.

Care responsibilities added another layer. R06's day after work involved sleeping, picking up her daughter, cooking, helping with homework, and preparing for the next shift. Her sentence, "Where is my own time?", appeared several times in different forms during the interview. R10 cared for elderly parents and said that the little time left after work was not empty time but family time. These accounts show that educational time poverty was relational. It was produced not only by platform labour but also by the unequal distribution of unpaid care. Female riders in the sample were especially likely to describe study as something squeezed between paid work and domestic responsibilities, although male riders with young children also reported significant constraints.

Institutional design further shaped capability conversion. Online courses appeared more accessible than face-to-face programmes, but their usefulness depended on deadlines, assessment rules, and support. R05 bought a course advertised as self-paced, then found that weekly check-ins affected completion. Missing several check-ins during a busy period made him feel behind, and he stopped opening the platform. R13 wanted a certificate involving a practical assessment but could not attend the required group practice sessions. He did not reject training in principle; he rejected a format that assumed daytime availability.

Prior educational experience also mattered. Riders with lower schooling often described returning to study as intimidating. R15 said he sometimes opened a lesson but felt lost after unfamiliar terms appeared. Instead of asking for help, he closed the app and told himself he lacked discipline. Riders with stronger educational biographies were better able to use short or irregular intervals. R20, a former high-school teacher, took an asynchronous human-resources course and created handwritten summaries during quieter nights. He still found night work tiring, but he knew how to break materials into smaller tasks and how to return to a topic after interruption. His case shows that the same fragment of time may have different educational value depending on previous learning experience. Cross-case comparison further showed that educational time poverty was unevenly experienced within the sample. Riders with childcare responsibilities, especially those caring for preschool- or primary-school-aged children, described depleted and misaligned time more strongly than riders without such responsibilities. For them, the hours after night work were rarely personal recovery time; they were often absorbed by school pickup, meals, homework, or family coordination. Riders with stronger educational backgrounds were somewhat better able to use fragmented time because they knew how to pause, summarise, and resume learning

tasks. By contrast, riders with junior-secondary schooling or below more often described short study attempts as confusing and discouraging. Employment status also mattered. Part-time riders had slightly more room to rearrange shifts, whereas full-time riders faced higher income pressure and were more likely to treat study as a risk to household stability. These differences did not overturn the general pattern, but they show that educational time poverty was intensified or softened by care, prior schooling, household support, and dependence on delivery income.

Boundary cases were especially instructive. R02, aged 26, completed an accounting certificate during the fieldwork period. His success depended on several conditions: His wife had a stable supermarket job; he had savings; he reduced night shifts to three per week for two months; and the course allowed recorded lectures. He said, “It was not because I am stronger than others. I had someone at home helping and some money saved. Without that, I would not finish.” This statement challenges moralised explanations of participation. It shows that persistence was supported by material and relational conditions that stabilised time.

The conversion problem can be summarised as follows. Formal provision existed, but riders’ ability to use it depended on income security, bodily recovery, family care, institutional flexibility, and educational confidence. These factors did not operate separately. Income pressure pushed riders to accept more night work; more night work produced fatigue; fatigue weakened study; missed study reduced confidence; reduced confidence made future attempts less likely. Educational time poverty therefore described an accumulating process rather than a single barrier.

Educational Meaning-Making under Precarious Work

Riders did not interpret continuing education in one way. Their narratives moved among aspiration, postponement, self-blame, scepticism, and critique. These orientations were not fixed types of people. A single participant could express several of them during one interview.

For some riders, education represented escape. R01 described delivery as unstable, physically exposed, and dependent on the platform’s decisions. He wanted a technical certificate so that he could move into factory maintenance or property management: “At least then I do not have to watch the app all night.” R07 said education was his “only way out”, although he had not yet found a course he could sustain. These riders valued learning because it offered a possible future beyond order-by-order income.

For others, education was a delayed possibility. R09 wanted to study for an adult bachelor’s degree but placed it in a future when he had saved more money or could shift to daytime work. R06 said she would consider a course when her daughter was older. These riders did not reject education. They placed it after more urgent demands. The problem was that the future they imagined was continually postponed by current

conditions. Saving enough money required more work; more work deepened exhaustion; exhaustion made planning harder.

A third orientation was self-discipline. Some riders interpreted constrained participation as personal weakness. R12 said, “If a person really wants to learn, he can squeeze time. I just cannot control myself.” R15 compared himself unfavourably with people who studied after work and concluded that his willpower was poor. These statements coexisted with detailed descriptions of interrupted orders, long nights, family duties, and fatigue. The language of self-discipline turned structural difficulty into moral failure. It also made riders less likely to demand institutional support because the problem appeared to be inside the self.

A fourth orientation was pragmatic scepticism. R04 asked whether additional learning would change much when even university graduates sometimes delivered food. R11 said that the platform recognised order volume, speed, and ratings, not certificates. This scepticism should not be mistaken for anti-educational sentiment. It was a practical assessment of uncertain returns. Riders knew that credentials could help in some sectors, but they also knew that age, hukou status, childcare, and labour-market competition could limit returns. Education was valued, but it was not automatically trusted.

Finally, some riders articulated a more critical view. R14 said that slogans about lifelong learning sounded empty when the algorithm and income pressure left no time to study. R18 put it more directly: “If the system does not change, people like us cannot study. It is not enough to tell us to improve ourselves.” These comments connected individual learning difficulty to broader arrangements of work and education. They did not produce a formal political programme, but they challenged the idea that educational exclusion could be solved through motivation alone.

These orientations show that educational time poverty is also moral and interpretive. Riders had to make sense of blocked aspirations. Sometimes they blamed themselves. Sometimes they blamed the platform. Sometimes they treated education as hope, and sometimes as a gamble. This ambivalence matters because adult learning policy often assumes that adults simply need information, motivation, and access. The riders’ accounts show a more complicated terrain in which educational desire persists but is reshaped by exhaustion, uncertainty, and unequal responsibility.

Taken together, the findings show how educational inequality can be produced even when educational opportunities are formally present. Algorithmically organised night work generated time that was broken into short intervals, difficult to plan, misaligned with educational institutions, and physically depleted. These temporal conditions interacted with income pressure, care responsibilities, course design, and prior educational experience. Riders responded through aspirations for escape, repeated postponement, self-blame, scepticism about returns, and critical reflection on the contradiction between lifelong learning discourse and platform labour. The study

therefore moves beyond the statement that riders lack time. It shows how contemporary labour arrangements can produce time that is present on the clock but unusable for learning.

Discussion

Rethinking Time in Adult Education

The findings revisit a familiar problem in adult education: Adults may value learning but still be unable to participate. Barrier-based approaches remain important because they avoid reducing non-participation to weak motivation (Cross 1981). The bounded agency perspective also shows that learning decisions are made within institutional, labour-market, and welfare contexts (Rubenson and Desjardins 2009). This study builds on these arguments by showing that time should not be treated as a simple situational barrier.

The findings therefore suggest that adult education research should distinguish between clock time and usable learning time. Flexibility, in itself, does not guarantee participation. Recorded lectures, mobile access, and asynchronous materials helped only when riders had time that could be protected from orders, recovered from fatigue, and aligned with assessment or administrative requirements. The problem was not simply that riders failed to manage their time well. Rather, their available time was already shaped by algorithmic dispatch, income pressure, sleep disruption, and care responsibilities.

Educational Time Poverty and Capability

Educational time poverty describes a condition in which learning opportunities exist, but the time needed to use them is repeatedly broken, unstable, institutionally inconvenient, or physically exhausted. The concept refines general discussions of time poverty by focusing on education: The issue is not busyness alone, but the failure to convert formal opportunity into learning capability.

The capability approach helps clarify this point. Courses, phones, certificates, and online platforms were resources, but their value depended on whether riders could use them (Nussbaum 2011; Sen 1999). Conversion was shaped by income, health, family support, prior educational confidence, and course design. Riders who completed or sustained study usually had some combination of savings, household support, reduced shifts, and genuinely asynchronous materials.

Rhythmanalysis adds that these conversion conditions were temporal. Income followed the rhythm of order-taking and bonuses. Care appeared through school pickup, meals, homework, and elder support at specific times. Educational institutions worked through registration windows, live sessions, examinations, and administrative hours. Bodily capacity depended on sleep, memory, and concentration after night work. Learning capability narrowed when these rhythms collided.

Platform Flexibility, Self-Responsibility, and Blocked Mobility

The study adds an educational dimension to platform labour research. Existing studies show that platform work combines autonomy with algorithmic control, shifting risk to workers through dispatch systems, incentives, ratings, and performance metrics (Duggan et al. 2020; Galière 2020; Kellogg, Valentine, and Christin 2020; Wood et al. 2019). Research on delivery riders also links algorithmic management to work intensity, burnout, mental health risks, and risk-taking (Cheng et al. 2024; Dong, Zhang, and Wu 2025; Huang 2023; Liu, Yang, and Liu 2025). This study shows that these conditions also shape workers' educational futures.

Platform flexibility was not meaningless. Riders chose waiting points, rejected some orders, used quiet periods for small learning tasks, and sometimes reduced shifts before examinations. But its educational value was uneven. It helped riders who had savings, family support, prior study experience, or courses with real asynchronicity. Without these supports, flexibility often became uncertainty: Riders were free to stop working, but stopping meant lost income; they were free to study online, but night work had often already used up their attention.

This unevenness shaped how riders understood education. Some saw it as a route out of delivery work. Others postponed it until debts were lower, children were older, or day work became possible. Some doubted whether certificates would change their position. Others blamed themselves for lacking discipline, even while describing fatigue, care responsibilities, and unstable schedules. Lifelong learning discourse can intensify this self-blame when mobility is framed mainly as individual self-improvement. At the same time, some riders clearly recognised the contradiction between being told to learn and working under conditions that consumed their nights, sleep, and attention. Their narratives moved between aspiration, calculation, self-blame, and critique.

Implications for Research and Policy

Adult education research should examine not only whether learners report time as a barrier, but what kind of time they have. Short breaks, exhausted mornings, uncertain evenings, and fixed administrative deadlines produce different constraints. Capability-oriented research should also treat temporal organisation as central to whether educational resources can be used. The same online course may be an opportunity for one learner and an inaccessible burden for another.

Platform labour research, in turn, should look beyond immediate earnings and workplace control to workers' future mobility. Algorithmic management affects not only present work but also the time and energy needed to pursue education, credentials, and alternative employment.

For policy and practice, expanding adult education provision is necessary but insufficient. Precarious workers need genuinely asynchronous materials, modular

assessment, flexible examination windows, mobile-friendly administration, and advising that does not assume daytime availability. Registration, document submission, consultation, and examinations can become major barriers when they must be completed after night work.

Educational institutions cannot solve the problem alone. Income insecurity and platform scheduling also produce educational time poverty. Paid training leave, income support during study, stronger labour protections, and platform accountability are therefore relevant to educational inclusion. Lifelong learning depends not only on available courses, but on whether workers have time that can actually be used for learning.

Conclusion

This article has examined night-shift food delivery riders as adult learners, rather than only as platform workers. The central finding is that continuing education was not blocked simply by the absence of courses or by riders' lack of aspiration. Many riders knew about adult degree programmes, vocational certificates, and online courses, and several had tried to participate. What limited them was the difficulty of turning available opportunities into sustained learning under conditions of night work, unstable income, bodily fatigue, and household responsibility.

Educational time poverty names this difficulty. It directs attention to the quality and organisation of time, not only to its quantity. For the riders in this study, learning depended on whether time could be made continuous enough for attention, predictable enough for planning, aligned enough with institutional requirements, and recoverable enough for memory and concentration. These conditions were unevenly distributed. Riders with savings, family support, prior study experience, or genuinely asynchronous courses were better able to continue learning, while others repeatedly postponed or abandoned study despite valuing education.

The study is limited by its single-city qualitative design and by its focus on participation rather than long-term educational outcomes. Future research could compare platform workers across cities, occupations, welfare systems, and course designs. The findings are not intended to represent all delivery riders or all forms of platform work. Their transferability lies instead in the temporal mechanism identified here: When work is organised through unstable demand, algorithmic scheduling, bodily exhaustion, and weak institutional accommodation, formal educational access may fail to become usable learning capability. This mechanism may be relevant to other precarious night workers, shift workers, and platform workers, although its specific form will vary across cities, welfare arrangements, family structures, and educational systems. It could also examine how gender, migration status, and unpaid care shape educational time poverty in different settings.

The broader argument is that lifelong learning cannot be evaluated only by the availability of programmes. Adult education policy must also ask whether workers have

the temporal conditions needed to use them. For precarious night workers, educational inclusion requires not only access, but time that can be protected, recovered, and recognised as part of learning.

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