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Technology-Enabled Career Development for Youth in Zambia: Linking Learning to Opportunity

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Abstract
Young people in Zambia face persistent barriers in moving from education and training into employment. Although overall unemployment declined from 12.9% in 2024 to 9.9% in 2025, unemployment among people aged 15–24 remained 23.9%, approximately 2.09 million young people in this age group were not in employment, education or training, and informal employment accounted for 63.4% of total employment. This paper presents a narrative review of 13 sources, including official statistics, institutional reports, peer-reviewed studies, working papers and evaluation summaries, on how digital technology can support career development among Zambian youth. The review synthesises evidence on the learning-to-work gap, information gaps and career guidance, digital matching platforms, and access, infrastructure and digital skills. The evidence indicates that youth employment barriers are interconnected, that network coverage does not ensure digital reach, and that digital platforms may reduce information frictions but cannot address weak labour demand alone. No evaluated integrated learning-to-opportunity platform in Zambia was identified in the sources reviewed. The paper translates the findings into design implications and illustrates them using GrowthHub, a mobile platform combining curated learning content and opportunity listings. GrowthHub has not yet been evaluated and is presented only as an illustrative case. The review concludes that platforms should be designed for limited data, shared or intermittent device access, basic digital skills, informal and entrepreneurial pathways, and the collection of outcome data.

Keywords: Youth Employment, Career Development, Mobile Technology, Digital Platforms, Digital Skills, Zambia

1. Introduction

The transition from education to work is one of the most important transitions in a young person's life. In countries with large youth populations, it is also a major development challenge. The World Bank describes Zambia's large youth population as a demographic opportunity that may not be realised unless limited access to quality education and skills training, unemployment and weak youth engagement are addressed [1].

National data show both progress and persistent difficulty. The 2025 Labour Force Survey reports that overall unemployment declined from 12.9% in 2024 to 9.9% in 2025 [2]. However, unemployment among people aged 15–24 was 23.9%, approximately 2.09 million young people in this age group were not in employment, education or training, and informal employment accounted for 63.4% of total employment [2]. These figures suggest that a decline in headline unemployment does not necessarily mean that young people face an easier transition from learning to work.

The challenge is therefore one of connection as well as job creation. Using international labour-market data, the World Bank estimates that about 90% of Zambia's 6.4 million young people, defined as those aged 15–35, are economically disengaged or only partially engaged [1]. The report also identifies weak links between training institutions and employers, limited career guidance and insufficient tracking of graduate outcomes. National officials presenting the 2025 Labour Force Survey similarly called for stronger links between education, vocational training, entrepreneurship and employment [2].

Digital technology is frequently proposed as a way of strengthening these links. Mobile devices can deliver learning materials, career information and opportunities directly to young people. However, evidence on digital interventions is mixed. Experimental studies in other African settings suggest that improved information and skills signalling can improve labour-market outcomes [3, 4]. A randomised trial in Mozambique found no significant improvement in average employment outcomes following an invitation to use digital job-matching platforms [5]. In Zambia, mobile-network coverage is extensive, with broadband-capable mobile services reported to reach 92% of the population, but internet penetration was approximately 33%

in early 2025 [6]. Evidence that integrates technology, learning and employment opportunities for Zambian youth remains limited.

This paper reviews available evidence and draws implications for the design of mobile platforms that link learning to opportunity. It addresses three questions:

1. What barriers do young people in Zambia face in moving from learning to work, according to existing evidence?
2. What do available sources show about the access, infrastructure and digital-skills conditions that shape the reach of digital and mobile approaches?
3. What do these findings imply for the design of integrated learning-to-opportunity platforms in Zambia?

The paper makes three contributions. First, it synthesises Zambian and relevant African evidence on youth employment, career information, digital access and digital learning. Second, it identifies the absence of evaluated integrated learning-to-opportunity platforms in the reviewed Zambian evidence. Third, it translates the evidence into design implications for mobile career platforms, illustrated through GrowthHub.

2. Materials and Methods

2.1 Study design

This study used a narrative review approach. A narrative review was appropriate because evidence on technology, career development and youth employment in Zambia is limited, heterogeneous and drawn from different types of sources, including official statistics, institutional reports, peer-reviewed studies, working papers and evaluation summaries. A narrative approach allows the synthesis of diverse evidence where a statistical meta-analysis or narrowly defined systematic review would not be suitable.

The review was conducted by one author. Sources were identified through iterative web searches, targeted searches for specific reports and studies, browsing of relevant institutional websites, and examination of reference lists. The search process was exploratory rather than exhaustive. This is acknowledged as a limitation of the review.

2.2 Search strategy and source selection

Sources were identified during November 2026 through Google Search, Google Scholar and targeted searches for specific reports and studies. Search terms included *Zambia*, *youth employment*, *school-to-work transition*, *career guidance*, *job search*, *digital platform*, *mobile learning*, *digital skills*, *TEVET*, *ICT access* and *sub-Saharan Africa*. Relevant institutional websites, including those of the Zambia Statistics Agency, Zambia Information and Communications Technology Authority, World Bank and U.S. International Trade Administration, were also consulted.

Sources were considered for inclusion if they:

- Addressed youth employment, learning-to-work transitions, career information, digital or mobile access, digital learning, or digital platforms;
- Reported empirical data, official statistics, evaluation findings or substantive analysis rather than opinion alone;
- Were published between 2015 and 2026, or were foundational to the review;
- Were available in English; and
- Were relevant to Zambia or provided transferable evidence from comparable African settings.

Zambian sources were prioritised. Evidence from Ethiopia, South Africa and Mozambique was included where direct Zambian evidence was unavailable, particularly on job search, skills signalling and digital matching platforms. Social-media posts, unattributed web summaries and sources without substantive evidence were excluded.

Some government websites, including SMART Zambia, were unavailable during the search period. This limited access to some national digital-strategy documents.

2.3 Data extraction and synthesis

Thirteen sources met the inclusion criteria and are summarised in Table 1. Each source was reviewed for its main findings, relevance to the research questions, population or setting, and limitations. Findings were grouped into four themes: youth disengagement and the learning-to-work gap; information gaps and career guidance; digital matching platforms; and access, infrastructure and digital skills.

Because several sources are institutional reports and statistical releases, the synthesis is primarily descriptive. The review compares findings across sources, identifies areas of agreement and disagreement, and notes where evidence is absent. Peer-reviewed studies and official statistical sources were prioritised. Blog posts and evaluation summaries were treated as secondary accounts of underlying studies and were used only where the underlying material was not directly accessible.

Table 1: Sources included in the review

Source	Type	Contribution to the review
ZamStats [2]	Official statistical release	Labour-market context, youth unemployment, NEET population and informality
World Bank [1]	Institutional report	Youth disengagement, TEVET, career guidance, digitalisation and policy
Chinen and Woldetsadik [7]	Institutional blog summarising World Bank studies	Digital readiness, devices, electricity and digital skills in TVET
ZICTA [8]	National household ICT survey	Household phone, internet and smartphone access
ITA [6]	Government trade guide	Network coverage, internet penetration and digital policy
Greenleaf *et al.* [9]	Peer-reviewed article	Youth phone ownership and access inequalities
Abebe *et al.* [3]	Peer-reviewed field experiment, Ethiopia	Job-search constraints, skills signalling and employment outcomes
Carranza *et al.* [4]	Peer-reviewed field experiments, South Africa	Skills information, job search and hiring
Jones and Sen [5]	Working paper, field experiment, Mozambique	Digital job-matching platforms and youth employment
Gargano *et al.* [10]	Evaluation summary, randomised trial, South Africa	LinkedIn training, job readiness and employment
Kaliisa and Picard [11]	Systematic review	Mobile learning in African higher education
Loglo and Zawacki-Richter [12]	Systematic review	Digital learning in African higher education
Davis [13]	Peer-reviewed conceptual article	Technology acceptance and adoption

3. Results and Discussion

3.1 Youth disengagement and the learning-to-work gap

Both national statistics and the World Bank report indicate a gap between young people's education and training and the work available to them. The World Bank reports that young people make up more than half of Zambia's labour force but tend to have low skill levels and work in low-paying jobs. It estimates that approximately 90% of Zambia's 6.4 million youth aged 15–35 are economically disengaged or only partially engaged [1].

Disengaged youth are not a homogeneous group. The World Bank reports that most young people not in employment, education or training are aged 20–29, live in rural areas and are women. Specifically, 60% are aged 20–29, 62% live in rural areas and 58% are women [1]. The 2025 Labour Force Survey adds that unemployment among people aged 15–24 is more than double the national rate and that informal employment accounts for 63.4% of total employment [2].

The World Bank links these outcomes to the organisation of the training system. Many institutions meet only minimum quality standards, have weak links with employers and provide limited work-based learning. Governance is also fragmented, with concerns about duplicated policies and programmes, particularly for out-of-school youth [1].

Taken together, these sources suggest that the problem is partly structural. Learning, training and work are often organised as separate systems, and young people are expected to connect them themselves. The figures draw on different years and definitions of youth, so they should be interpreted as complementary rather than directly comparable.

3.2 Information gaps and career guidance

Limited information is a recurring barrier. The World Bank reports that few tracer studies track the outcomes of training graduates, that schools offering career guidance often do not track students, and that guidance staff may need additional training on available education and employment pathways [1]. National officials have also called for labour-market evidence to inform training priorities [2].

Evidence from other African settings shows how information affects labour-market outcomes. In Addis Ababa, a randomised evaluation compared a transport subsidy with a job-application workshop that helped young job seekers signal their skills to employers. Both interventions increased the probability of formal employment in the short term. Four years later, the workshop continued to improve earnings, job satisfaction and employment duration, with the strongest effects among young people who initially faced greater labour-market disadvantage [3].

In South Africa, providing unemployed and underemployed young people with credible assessment results that they could share with employers increased employment and earnings. The intervention also helped align young people's beliefs and job-search strategies more closely with their actual skills.[4] These studies suggest that young people may possess skills that employers cannot easily observe, and that making those skills visible can improve outcomes.

Neither study involved a digital platform or was conducted in Zambia. They therefore inform platform design rather than establish the likely size of effects in Zambia. It is also plausible, though not directly tested in these sources, that institution-based career guidance reaches mainly enrolled students rather than young people who are outside education and training.

3.3 Digital matching platforms

Evidence on digital platforms is thinner and less consistent. In Mozambique, young people who had completed technical and vocational training were randomly invited to register on one of two digital labour platforms: one focused on occasional, mainly manual work and the other on more professional work. For the average graduate, the intervention did not produce a significant improvement in overall employment outcomes. The authors found weak evidence of increased job search and lower satisfaction among some participants, alongside positive effects for women registering on the manual-work platform. They concluded that digital matching platforms may serve particular groups but are unlikely to be a general solution where labour demand is weak [5].

In South Africa, a randomised trial found that training low-income young job seekers to use LinkedIn, alongside a job-readiness programme, increased end-of-programme employment by 7 percentage points relative to a comparison-group average of 70%. The effects persisted for 12 months. The evidence suggests that participants used the platform to learn about employers and job opportunities [10].

Together, these studies suggest that digital platforms can reduce information frictions and support job search, but they cannot create jobs or overcome weak labour demand. Support in using a platform may be as important as the platform itself. Neither study was conducted in Zambia, where informal employment represents a large share of total employment [2].

3.4 Access, infrastructure and digital skills

The evidence suggests that digital reach depends on several connected conditions: network coverage, device ownership, internet access, electricity, affordability and digital skills.

Network coverage is extensive. Broadband-capable mobile services are reported to reach 92% of Zambia's population [6]. However, internet penetration was approximately 33% in early 2025 [6], and household internet access was 33.4% in 2022, despite 80.7% of households owning a mobile phone [8]. The urban–rural divide is notable: 92.1% of urban households owned a phone, compared with 72.4% of rural households [8].

Individual access is also uneven. A nationally representative survey conducted in 2021 found that 47% of Zambian youth aged 16–24 personally owned a mobile phone, while a further 10% had access to someone else's phone. This implies that approximately 43% had neither personal ownership nor regular access to another person's phone [9]. Ownership was higher among older youth, those with secondary education or above, and those from wealthier households. It was lower among young women [9]. The survey did not measure phone type or patterns of use, and it was designed to inform health programmes rather than career-development interventions.

Conditions in training institutions add further constraints. World Bank assessments summarised by Chinen and Woldetsadik found that most technical and vocational institutions reported internet access, but more than half reported unreliable electricity. At least one-third had no devices for teaching and learning, and most institutions did not train instructors in digital skills. In task-based

assessments, teachers demonstrated beginner-level digital skills, while students scored lower. Male students performed better on average. Student skills were largely limited to basic smartphone-related tasks, and awareness of online safety, including phishing, was limited [7].

These findings relate to technical and vocational institutions and cannot be generalised to all Zambian youth. Nevertheless, they caution against assuming that users of a digital career platform will have advanced digital skills, reliable electricity, personal smartphones or uninterrupted internet access.

Taken together, the evidence reveals a tension between digital reach and need. Young people who are most disengaged from employment and education are disproportionately rural, female and outside formal institutions [1]. These same groups may be less likely to own a phone [9] or live in a household with reliable digital access [8]. This is an inference drawn from separate sources, not a finding established by any single study.

3.5 Mobile and digital learning

The World Bank treats digital approaches as promising but conditional. It describes mobile literacy programmes, which deliver self-paced learning through smartphones or tablets, as a promising way to reach semi-skilled youth, including those in remote areas. The report recommends strengthening foundational skills, including digital literacy. It also notes that lower-cost, mature technologies may offer the greatest short-term potential, while the cost of digital TEVET rises sharply as technological sophistication increases [1].

Chinen and Woldetsadik add that digital skills are increasingly relevant across occupations, including those traditionally considered low-technology. They also report that findings from digital-readiness assessments are informing the design of an artificial-intelligence-enabled career-guidance pilot [7].

Reviews of mobile and digital learning in African higher education identify potential benefits, including improved collaboration and engagement. However, they also identify persistent barriers, including poor infrastructure, limited access to modern devices, high connectivity costs, limited digital proficiency and insufficient large-scale effectiveness research [11, 12]. Both reviews focus on university students, so their findings may not fully represent young people outside formal education.

The Technology Acceptance Model provides a useful lens for interpreting these findings. It proposes that perceived usefulness and perceived ease of use strongly influence whether individuals accept a technology [13]. This suggests that a career platform must be both practically valuable and easy to use if it is to be adopted by young people with limited digital experience.

3.6 Research gap

The Zambian evidence reviewed here is stronger in describing problems than in testing solutions. National statistics and the World Bank report document youth disengagement, skills gaps and weak career guidance, but they do not evaluate digital tools designed to address these challenges.

Evidence on digital readiness focuses mainly on formal technical and vocational institutions [7]. The most detailed recent evidence on youth phone access was collected for health-related research rather than career development [9]. Experimental studies from Ethiopia, South Africa and Mozambique provide useful insights into job search, skills signalling and digital matching, but they do not examine integrated platforms that combine learning content with opportunity listings [3-5]. Reviews of mobile learning focus primarily on university students rather than out-of-school youth [11, 12].

No study identified in this review evaluated an integrated mobile platform that combines learning content, career information and opportunity listings for young people in Zambia. This paper addresses that gap by synthesising available evidence and translating it into design implications.

3.7 Implications for platform design

The evidence supports seven design implications and one important caution. The caution comes from the Mozambique trial: a platform may improve matching, but it cannot by itself create labour demand [5]. Claims about the potential impact of any platform should therefore remain modest.

First, learning and opportunity should be linked in one place. The evidence suggests that young people face disconnected systems of education, training, guidance and employment [1, 2]. A platform that separates learning from opportunities may reproduce this fragmentation.

Second, platforms should help young people make their skills visible to potential employers. Evidence from Ethiopia and South Africa suggests that skills that employers cannot easily observe can limit employment opportunities [3, 4]. Skills that are assessed, verified or credibly presented may carry more weight than self-reported skills alone.

Third, platforms should provide career information to young people outside formal institutions. Career guidance in Zambia appears largely institution-based, while many disengaged young people are outside schools, colleges and training centres [1].

Fourth, platforms should be designed for limited data, intermittent connectivity, shared devices and unreliable electricity. They should not assume that every user has a personal smartphone. The gap between network coverage and actual internet use, combined with uneven phone ownership, makes low-bandwidth and multi-channel design important [6, 8, 9]. The use of text messages in the Mozambique trial also suggests that simple channels can complement smartphone-based applications [5].

Fifth, platforms should assume basic rather than advanced digital skills. Simple navigation, plain language, clear onboarding and support for first-time users are important. Evidence from South Africa suggests that training users to use a professional networking platform improved employment outcomes [10], while Zambian TVET evidence shows that digital skills remain limited [7].

Sixth, platforms should include informal and entrepreneurial pathways alongside formal employment. Given that informal work accounts for 63.4% of employment in Zambia, a platform focused only on formal vacancies may exclude many realistic pathways to income generation [2].

Seventh, platforms should record outcome data. Applications, profile completion, learning activity, employer responses and eventual employment or training outcomes can help address the lack of tracer data identified in the Zambian evidence base [1]. Data collection should be transparent, purpose-limited and consistent with privacy and data-protection requirements.

Equity should cut across all these design implications. Because young women and rural youth may face greater barriers to phone ownership and digital access, platforms should monitor reach, registration, usage and outcomes by gender and location.

Table 2: Design implications and the current version of GrowthHub

Design implication	Evidence	Current GrowthHub response
Link learning and opportunity	World Bank; [1] ZamStats [2]	In place: curated learning content and opportunity listings are available in one application, with skills recorded on user profiles
Make skills visible to employers	Abebe *et al*.; [3] Carranza *et al*. [4]	Partly in place: skills are recorded on profiles and opportunity listings state required skills, but skills are self-reported and not independently assessed
Provide career information beyond institutions	World Bank [1]	In place: registered users can browse opportunities posted by organisations
Design for limited data, devices and power	Greenleaf *et al*.; [9] ITA; [6] ZICTA; [8] Chinen and Woldetsadik [7]	Not yet in place: no dedicated low-data or offline mode; a smartphone is required
Support basic digital skills and first use	Chinen and Woldetsadik; [7] Gargano *et al*. [10]	Limited: registration requires an email address and verification code; phone-number sign-in is not yet available
Include informal and entrepreneurial pathways	ZamStats; [2] World Bank [1]	In place: listings may include internships, training and small-business opportunities, as well as formal jobs
Record outcomes	World Bank [1]	Partly in place: applications are recorded, but completion of learning content is not yet tracked

The table shows that GrowthHub already addresses some design implications, partly addresses others, and does not yet meet several requirements suggested by the evidence. These gaps provide a practical agenda for future development and evaluation.

3.8 Implications for policy and practice

For policy, the evidence supports closer links between training providers, career-guidance staff, employers and digital platforms. Platforms should complement, rather than replace, institution-based guidance and should be designed to reach young people outside formal education and training systems.

Policy should also support the use of labour-market information by training providers, young people and employers. The call by national officials to align workforce preparation with investment planning is consistent with this need [2].

For practice, developers should design for the layered constraints identified in this review. This includes low-data functionality, simple navigation, support for first-time users, inclusion of informal and entrepreneurial opportunities, and planned collection of outcome data. Developers should also plan evaluation from the outset, because the absence of evidence on platform effectiveness is itself an important finding.

4. Limitations

This review has several limitations. It is a narrative review based on 13 sources, many of which are institutional reports, statistical releases, working papers or evaluation summaries. The evidence base is heterogeneous and cannot support statistical synthesis.

The search was conducted by one author using iterative web searches, targeted searches and reference-list checking. It was not a systematic search with pre-registered protocols, independent double-screening or a complete record of all search results. Relevant studies may therefore have been missed.

The sources use different years and definitions of youth, which limits direct comparison. Some evidence is not Zambia-specific. Experimental studies from Ethiopia, South Africa and Mozambique provide useful design insights but cannot establish likely effects in Zambia. Evidence on digital skills and infrastructure comes mainly from technical and vocational institutions and cannot be generalised to all young Zambians.

GrowthHub has no established user base and has not been evaluated. This paper makes no claims about its demand, usability, adoption or impact.

5. Conclusion

This paper reviewed evidence on how digital technology can support career development among young people in Zambia. National data show that overall unemployment has declined, but youth unemployment remains high, many young people are outside employment, education and training, and most employment is informal [2].

The wider evidence suggests that young people face weak connections between learning, training and work, limited career guidance, and uneven access to devices, data, electricity and digital skills [1, 7, 9]. Experimental evidence from other African settings suggests that better information and skills signalling can improve labour-market outcomes, but digital matching platforms alone do not overcome weak labour demand [3-5].

Platforms that link learning to opportunity are therefore a reasonable but limited response. They should be designed for limited data and devices, basic digital skills, informal as well as formal pathways, and the collection of outcome data. The evidence base for such platforms in Zambia remains thin.

6. Recommendations

- Developers of youth career platforms should integrate learning content, career information and opportunity listings in one accessible platform.
- Platforms should support low-data use and intermittent connectivity.
- Platforms should use simple navigation, plain language and clear onboarding for users with basic digital skills.
- Platforms should include informal work, internships, training and small-business opportunities alongside formal vacancies.
- Platforms should enable young people to present skills in ways that employers can understand and trust.
- Platforms should record outcome data, including applications, learning completion, employer responses

and employment or training outcomes.
- Platforms should monitor access and outcomes by gender, location and socioeconomic status.
- Policymakers should improve links between training providers, employers, career-guidance services and digital platforms.
- Future research should evaluate integrated learning-to-opportunity platforms with young people outside formal institutions and measure practical outcomes.

7. Declarations

Conflict of interest: The author is involved in the development of GrowthHub. No financial support or commercial agreement was received for this review.

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Data availability: No new data were created or analysed in this study. All sources reviewed are publicly available and cited in the reference list.

Author contribution: Chitakala Yumba conceived the review, identified and reviewed the sources, synthesised the evidence and wrote the manuscript.

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