



Beyond Physical Access: Mobility and Educational Participation among Student-Teachers with Orthopaedic Impairments in Ghana

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ABSTRACT

Educational inclusion is often understood in terms of admission and physical entry into educational institutions, but formal access does not necessarily guarantee meaningful participation. This study examined how physical and environmental barriers shaped the educational experiences of student-teachers with orthopaedic impairments in selected Colleges of Education in Ghana. A qualitative phenomenological case study involved four student-teachers, one from each of four colleges in the Eastern Region. Data were generated through semi-structured interviews and analysed thematically. Participants described long distances between dormitories and classrooms, high buildings, steep ramps, difficult terrain, inaccessible facilities, and unexpected changes in examination locations. These barriers were associated in participants' accounts with additional travel time and exertion, pain, fatigue, missed academic activities, reduced co-curricular participation, and examination-related difficulty. The findings are interpreted using the social/environmental model of disability, the Transactional Model of Stress and Coping, and Universal Design for Learning. The analysis suggests that disability-related educational disadvantage can be intensified by environments that do not anticipate physical diversity. The article proposes functional educational accessibility as a way to assess whether students can move, learn, access assessment, and participate in college life without disproportionate burdens. Colleges of Education should audit campus routes and facilities, communicate examination locations in advance, provide coordinated disability support, and include students with disabilities in accessibility planning. The study reflects fieldwork conducted in January 2017 and does not constitute a current audit of the institutions.

Keywords: orthopaedic impairment; mobility barriers; educational participation; inclusive education; Universal Design for Learning; Ghana

1. INTRODUCTION

Inclusive education has increasingly become an important component of international and national educational policy. Contemporary approaches to disability emphasize the right of persons with disabilities to participate meaningfully in education without discrimination or unnecessary barriers. In principle, this requires educational institutions to provide environments in which students with disabilities can access buildings, curriculum, teaching, assessment, social activities, and other aspects of institutional life.

Formal access to education does not necessarily translate into functional participation. A student may obtain admission, register for courses, and attend classes while experiencing significant barriers in moving around campus, accessing facilities, participating in activities, or completing academic responsibilities. Educational inclusion therefore needs to be understood as more than physical presence.

This issue is particularly important for students with orthopaedic impairments because movement through educational environments may require considerably greater physical effort than it does for students without mobility limitations. The doctoral research underlying this article identified stress associated with mobility, physical infrastructure, academic demands, financial difficulties, co-curricular participation, and other aspects of college life.



Participants described long distances between dormitories and classrooms, high buildings, steep ramps, and other inaccessible structures. One participant reported that travelling between the dormitory, classroom, and other areas consumed considerable time and could result in stumbling. Another described the distance from the dormitory to the classroom as too great and identified the science laboratory as difficult to reach. A further participant described a ramp as too steep to be effectively useful.

These experiences raise the question of whether the educational difficulties experienced by student-teachers with orthopaedic impairments arise only from impairment or are also produced by the environments in which education takes place. This article examines mobility barriers and their implications for educational participation, drawing on the social/environmental model of disability, the Transactional Model of Stress and Coping, and Universal Design for Learning (UDL).

The article focuses on three questions: (1) What physical and environmental barriers do student-teachers with orthopaedic impairments report in selected Colleges of Education? (2) How do these barriers affect academic and co-curricular participation? and (3) What implications do the findings have for accessible and inclusive teacher education?

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Medical and social/environmental models of disability

The medical model conceptualizes disability primarily in terms of impairment, bodily limitation, diagnosis, treatment, and rehabilitation. Medical knowledge and rehabilitation can be important to the wellbeing of persons with disabilities. However, a purely medical interpretation is insufficient to explain all educational barriers reported in this study.

The social model distinguishes impairment from disability and emphasizes barriers created by physical, institutional, and attitudinal arrangements (Oliver, 1990). A student's physical impairment may make walking difficult, but the degree of difficulty is also influenced by the route through which the student must move. A short, level, accessible route may create relatively little additional difficulty, whereas a long route involving stairs, steep ramps, uneven terrain, or high buildings can transform the same impairment into a major educational barrier.

This perspective shifts attention from an individual's impairment alone to the ways educational environments respond to physical diversity. It does not deny pain, fatigue, or other bodily experiences; rather, it recognizes that these experiences interact with the environments in which they occur. The same impairment may have different educational consequences depending on the accessibility of buildings, routes, schedules, assessment arrangements, and support systems.

This distinction is particularly important in teacher education because student-teachers with disabilities are also future educators. Their experiences of inclusion and exclusion may inform how they understand disability and inclusive education in their later professional practice.

2.2 Transactional Model of Stress and Coping

Lazarus and Folkman's (1984) Transactional Model of Stress and Coping conceptualizes stress as emerging through the interaction between individuals and their environments. Rather than assuming that an external event automatically produces stress, the model emphasizes appraisal and the resources available to respond to demands.

This perspective is useful because participants did not respond identically to similar environmental conditions. One participant reported that mobility-related stress did not prevent continuation of academic responsibilities because relaxation made it possible to resume activities. Another reported difficulty studying when physical discomfort and uneasiness interfered with learning. A further participant described sleeping for much of a



stressful day, thereby reducing study time. The model helps interpret these differing responses without assuming that environmental barriers produce identical outcomes for all students.

2.3 Universal Design for Learning

Universal Design for Learning provides an educational framework for anticipating learner variability rather than treating difference as an unexpected exception. In this article, UDL is used as an interpretive framework, not as a claim that it can independently solve physical accessibility problems.

Barriers can arise not only in teaching materials but also in the organization of educational participation. Unexpected examination-room changes, distant classrooms, inaccessible facilities, and inflexible arrangements can impose additional demands on students with mobility impairments. UDL can complement, but cannot replace, physical accessibility, reasonable accommodation, and institutional responsibility.

2.4 Literature context

Students with physical and mobility impairments can experience barriers extending beyond classrooms, including inaccessible buildings, transportation difficulties, inadequate accommodation, limited support services, social isolation, financial constraints, and institutional practices that do not anticipate physical diversity. Research on students with mobility disabilities in Ghana has identified environmental accessibility as an important dimension of higher education experiences (Asante et al., 2017; Braun & Naami, 2021).

The issue is especially important in Colleges of Education, where students move among classrooms, dormitories, laboratories, administrative offices, dining facilities, recreational areas, and other spaces. Accessibility therefore needs to be considered across the whole institutional environment rather than only at classroom entrances. The underlying thesis also identified challenges involving basic activities such as fetching water and participation in co-curricular activities.

3. METHODS

3.1 Research design and setting

The study used a qualitative phenomenological case study design to obtain detailed descriptions of the lived experiences of student-teachers with orthopaedic impairments in Colleges of Education. This article presents a focused secondary analysis of doctoral research, concentrating on mobility barriers, disability models, educational participation, and accessibility. The design prioritizes participants' accounts of how they experienced and interpreted everyday campus and academic demands; it does not provide a direct, contemporary physical audit of the campuses.

The research was conducted in four Colleges of Education in Ghana's Eastern Region: Abetifi Presbyterian College of Education, Kibi Presbyterian College of Education, Presbyterian College of Education, Akropong, and S.D.A. College of Education, Koforidua. The institutions are identified here by location and institutional type because the available study record does not provide comparable details on campus size, building age, student enrolment, infrastructure inventories, or formal accessibility-audit results. These characteristics should not be inferred from participants' interview accounts. Fieldwork was conducted in January 2017; the findings therefore describe participants' experiences at that time, not current conditions at the institutions.

3.2 Participants and sampling

The sample comprised four student-teachers with orthopaedic impairments, one from each participating college; two participants were male and two were female. Purposive sampling was used to select the research sites, and census sampling was used to include the eligible student-teachers with orthopaedic impairments identified at those sites. The small sample reflected the limited number of eligible students enrolled in the participating institutions at the time. This approach was appropriate for a phenomenological inquiry seeking



detailed accounts from the available eligible participants, but it does not support statistical generalization to all student-teachers with disabilities or all Colleges of Education in Ghana.

3.3 Data collection

Data were generated through semi-structured interviews exploring participants' experiences of stress, sources of stress, academic life, mobility challenges, and coping strategies. The interview guide was pretested with students with orthopaedic impairments at another College of Education, and feedback from that process informed refinement of the questions. Interviews were conducted in settings considered comfortable and appropriate for discussing participants' experiences. The manuscript record available for this revision does not specify interview duration, language, recording and transcription procedures, or the exact sequence of prompts; these details should be added from the original fieldwork records if available rather than reconstructed from memory.

3.4 Data analysis and trustworthiness

Interview data were analysed qualitatively and thematically. Responses were coded, compared across participants, and organized into themes concerning mobility demands, architectural and environmental barriers, academic and co-curricular participation, stress and wellbeing, and examination access. The analysis presented here groups related accounts into themes and then interprets their implications through the study's conceptual frameworks. Measures reported in the source manuscript to strengthen trustworthiness included transcript review, member checking, peer discussion, and maintenance of an audit trail. To make the analytic process fully transparent, the authors should verify from the original research records who reviewed the transcripts, how participant validation was conducted, who participated in peer discussion, and what materials were retained in the audit trail. The present revision does not assume additional procedures beyond those reported in the source manuscript.

3.5 Ethical considerations

Participants were informed about confidentiality and the protection of their identities. Pseudonyms were used in presenting participant quotations, and participants were informed of their right to withdraw. The original research documentation must be consulted to insert the exact institutional ethics committee or review board name and clearance/reference number before submission; these details are not available in the manuscript provided.

4. RESULTS

4.1 Mobility as an additional educational demand

For participants, movement across campus was not simply a routine part of student life. It could require considerable time, effort, and physical energy. One participant explained that the physical environment consumed substantial time when moving between the dormitory, classroom, and other areas of the institution. The participant also described occasions when stumbling required returning to change clothing before continuing to class.

This account illustrates a mobility-related time penalty. For a student with a mobility impairment in an inaccessible environment, the transition from dormitory to classroom may involve additional planning, physical exertion, fatigue, and uncertainty.

4.2 Architectural and environmental barriers

Participants identified several physical features of the college environment that created challenges. One participant reported that the distance between the dormitory and classroom was too great and that the science laboratory was difficult to access. The participant described long-distance walking as tedious and painful,



particularly in cold weather. Other participants identified high buildings, the administration block, and a steep ramp as accessibility challenges.

These accounts indicate that accessibility is not simply a matter of installing a ramp at the main entrance. A campus may have some accessibility features while remaining functionally inaccessible because of long distances, inaccessible routes, steep ramps, high buildings, difficult terrain, or poorly positioned facilities.

4.3 Mobility barriers and academic participation

Mobility barriers had consequences for participation. Participants reported missed lectures, difficulty reaching activities, and reduced participation in co-curricular programmes. One participant indicated that distant lecture halls combined with limited advance information could contribute to missing lectures and important college programmes. Another stated that co-curricular activities were often avoided because participation felt unnecessary.

These accounts suggest that an institution can appear inclusive when measured by enrolment and classroom attendance while still producing exclusion from co-curricular activities, social events, recreational activities, laboratories, examinations, and informal student interactions. The term participation displacement describes withdrawal from activities when physical or institutional demands make participation disproportionately difficult.

4.4 Mobility, stress, and academic wellbeing

Participants differed in the degree to which mobility-related stress affected academic work. One reported that relaxation allowed him to resume academic responsibilities. Another reported difficulty studying when physical discomfort and uneasiness interfered with learning. A further participant indicated that stressful periods could result in spending almost an entire day sleeping, reducing available study time.

These accounts show that mobility barriers should not be assumed to produce identical outcomes for all students. Consequences depended partly on individual appraisal, coping resources, physical condition, and environmental circumstances.

4.5 Examination access as journey accessibility

One participant described an occasion when the examination location was suddenly changed to a distant location. After travelling to the new location, the participant realized that an identification card had been forgotten and had to return to retrieve it. The physical exertion reportedly resulted in severe trembling and affected examination performance.

This account illustrates that examination accessibility begins before the student enters the examination room. An examination may be administered under apparently equal academic conditions while reaching the room imposes substantially different physical demands on students. Advance communication, predictable locations, accessible routes and rooms, reasonable travel demands, and sufficient time to reach the venue are therefore relevant to examination access.

4.6 Thematic synthesis: barriers, consequences, and theoretical interpretation

Table 1 synthesizes the barriers described in the interviews, the reported experiences and educational consequences, and the ways the conceptual frameworks help interpret those accounts. The table summarizes qualitative evidence from four participants; it should not be read as a measure of prevalence or as a current audit of the participating colleges.

Table 1. Thematic synthesis of reported barriers, educational consequences, and theoretical interpretations

Barrier / accessibility dimension	Participant experiences reported	Educational consequences described	Theoretical interpretation
Routes and distances between facilities	Long journeys between dormitories, classrooms, and other facilities; a science laboratory was difficult to reach.	Additional travel time and exertion; pain and fatigue; possible lateness or missed activities.	Social model: route design and facility location can disable. Stress-and-coping model: journeys may be appraised as demands on safety, time, and energy.
Architectural features and terrain	Participants referred to high buildings, a steep ramp, difficult terrain, and challenging access to institutional blocks.	Movement became tedious, painful, or difficult; some facilities were harder to use.	Social model: environmental design contributes to exclusion. Functional accessibility asks whether connected routes and facilities are usable in practice.
Academic and co-curricular participation	Participants described missed lectures and reduced involvement in college programmes or co-curricular activities.	Reduced opportunities to learn, interact, and participate in the broader college experience.	Social model: barriers restrict participation. UDL supports predictable, flexible arrangements but cannot substitute for accessible infrastructure.
Stress, fatigue, and study routines	Participants described discomfort or uneasiness interfering with study; another described sleeping through much of a stressful day, while a participant also described relaxation as a coping response.	Reduced study time and energy; differing effects on academic routines.	Transactional Model: outcomes vary with appraisal, coping resources, and situational demands; individual coping should complement institutional change.
Examination journey and venue changes	One participant described a sudden change to a distant examination venue and a return journey to retrieve a forgotten identification card, followed by severe trembling.	The participant reported that physical exertion affected examination performance.	Social model: administrative arrangements can create barriers. Transactional Model: unexpected demands can intensify perceived threat; UDL-informed planning supports advance communication and predictable assessment access.

5. DISCUSSION

5.1 From physical impairment to environmental disability

The findings support an understanding of disability that extends beyond individual impairment to consider the interaction between bodily conditions and the environments in which education takes place. Participants described long routes between dormitories and classrooms, steep ramps, difficult terrain, and buildings or facilities that were challenging to reach. These accounts suggest that the educational consequences of an orthopaedic impairment cannot be understood solely in terms of a student's mobility condition; they are also shaped by how campus spaces are designed, connected, and maintained. This interpretation is consistent with the social model of disability, which directs attention to disabling barriers embedded in social and physical arrangements rather than locating disadvantage exclusively within the individual (Oliver, 1990).



Research in Ghana provides a close empirical comparison. Braun and Naami (2021) documented the emotional and academic consequences of inaccessible higher-education environments for students with mobility disabilities in the Accra metropolis. Similarly, Naami (2022) found that inaccessible built environments could compromise the dignity, autonomy, and self-determination of people with mobility disabilities. The present study extends this body of work by focusing on student-teachers in Colleges of Education and illustrating how barriers along everyday campus routes can affect not only general access, but also lecture attendance, laboratory access, co-curricular involvement, and examination participation. The convergence across these studies suggests that physical accessibility is not a peripheral facilities issue; it is part of the conditions that shape educational opportunity.

This interpretation should not be taken to mean that pain, fatigue, or impairment-related needs are unreal or irrelevant. Rather, the findings show that their effects are produced through an interaction between personal circumstances and environmental demands. A route that is manageable for one student may be exhausting or unsafe for another, particularly where long distances, steep gradients, uneven terrain, and limited alternatives coincide. The practical implication is that institutions should assess accessibility from the perspective of actual journeys and activities, rather than treating the presence of an isolated ramp or accessible entrance as sufficient evidence of inclusion.

5.2 Inclusion beyond admission and the hidden work of mobility

A central finding is that formal access does not necessarily translate into meaningful participation. Students may be admitted and registered yet face recurring difficulty reaching classrooms, laboratories, dining facilities, administrative offices, or social activities. The accounts of missed lectures and reduced co-curricular participation indicate that inclusion should be evaluated across the full range of educational life, not solely by admission, enrolment, or presence in a classroom. Braun and Naami (2021) similarly highlight the emotional and academic effects of inaccessible postsecondary environments, reinforcing the point that barriers in the built environment can influence students' experiences beyond the question of whether they have gained entry to an institution.

The findings also draw attention to what may be described as the hidden work of mobility: the additional time, planning, exertion, adaptation, and recovery required to move through an environment that does not adequately anticipate physical diversity. For students who experience pain or fatigue, reaching a lecture may consume energy that other students can devote to studying, social interaction, or extracurricular activities. When a campus route is long or unpredictable, the burden may also include uncertainty about whether a student can arrive on time or safely complete the journey. These costs are often invisible in institutional measures of attendance and achievement, but they can influence the extent to which students are able to participate on equitable terms.

Naami's (2022) analysis is relevant here because it connects inaccessible environments not only with practical restrictions but also with dignity and self-determination. In the present study, the need to avoid certain activities or to manage demanding journeys may limit students' choices about how they participate in college life. The concept of functional educational accessibility proposed in this article therefore shifts attention from whether a facility is nominally available to whether students can use it independently, safely, predictably, and without disproportionate physical cost. This is a contribution to discussions of inclusive education because it places the quality and burden of participation alongside formal access.

5.3 Mobility barriers, stress, and academic participation

The accounts of pain, fatigue, disrupted study, and examination-related difficulty can be interpreted through the Transactional Model of Stress and Coping. Lazarus and Folkman (1984) conceptualize stress in terms of the relationship between a person and environmental demands, including how those demands are appraised and what coping resources are available. From this perspective, a long journey to class or a last-minute change of examination venue is not simply a physical inconvenience. It may be appraised as a threat to punctuality, safety, energy, or academic performance, particularly when the student has limited control over the route or



insufficient time to adjust.

The participants' experiences also illustrate that similar environmental demands do not necessarily result in identical responses. Some described using relaxation or other personal strategies to manage difficult periods, while others reported that discomfort or uneasiness interfered with studying or reduced the time available for academic work. This variation is consistent with a transactional account in which stress outcomes are shaped by appraisal, coping resources, and situational conditions (Lazarus & Folkman, 1984). However, individual coping should not be treated as a substitute for institutional action. Relaxation, time management, or personal resilience may help students respond to demands, but these strategies do not make an inaccessible route accessible or prevent the consequences of an avoidable venue change.

The examination account is particularly important because it demonstrates how accessibility concerns can affect assessment before the examination begins. A sudden change to a distant venue, combined with the need to return for a forgotten identification card, reportedly resulted in severe trembling and affected the participant's performance. Because this is one participant's account, it should not be generalized to all students with orthopaedic impairments. Nevertheless, it highlights a plausible pathway through which environmental and administrative arrangements may intensify stress at a high-stakes moment. Predictable venue allocation, advance communication, accessible routes, and reasonable arrangements for reaching examination rooms should therefore be understood as components of fair assessment practice, rather than as optional conveniences.

5.4 Universal Design for Learning and the limits of pedagogical flexibility

Universal Design for Learning (UDL) offers a useful framework for anticipating learner variability and reducing unnecessary barriers in the design of educational experiences. CAST's (2024) UDL Guidelines encourage educators and institutions to design learning environments with learner differences in mind, rather than relying exclusively on individual adjustments after a barrier has arisen. In the context of the present findings, this orientation supports predictable communication, flexible ways of participating, accessible learning materials, and assessment arrangements that take account of students' circumstances. These approaches can reduce avoidable uncertainty and make educational processes more responsive to diverse needs.

However, the findings also show why pedagogical flexibility alone is insufficient. A flexible deadline or alternative learning material cannot resolve a steep ramp, an inaccessible building, or a long and exhausting route between essential facilities. UDL should therefore complement, rather than replace, physical accessibility measures. Institutions need both inclusive educational design and practical environmental changes, including accessible routes, appropriately located teaching spaces, advance notice of room changes, and coordinated disability support. This combined approach is consistent with the broader rights-based expectation that persons with disabilities should be able to participate in education on an equal basis with others (United Nations, 2006).

5.5 Contribution of the study: functional educational accessibility

The study's principal conceptual contribution is the idea of functional educational accessibility. In this article, functional educational accessibility is defined as the extent to which a student can reach, use, and participate in the academic and social opportunities of an educational institution safely, predictably, and with reasonable independence, without having to bear disproportionate physical, temporal, or psychological burdens because of inaccessible environments or inflexible institutional arrangements. This is a proposed analytical concept derived from the participants' accounts, not a validated measurement scale.

The concept can be examined through four observable dimensions. First, route accessibility concerns whether the routes connecting dormitories, classrooms, laboratories, administrative offices, dining areas, water sources, and other facilities are usable and reasonably safe. Second, independent mobility concerns whether students can complete routine journeys without excessive exertion, avoidable dependence on others, or heightened risk.



Third, assessment access concerns whether examination locations and routes are accessible, communicated in advance, and arranged so that students can reach the venue without avoidable disadvantage. Fourth, participation access concerns whether students can take part in lectures, laboratory work, co-curricular programmes, recreational activities, and social life rather than withdrawing because the physical or administrative demands are disproportionate. These dimensions should be assessed using evidence such as students' accounts, route and facility audits, records of room changes, and participation experiences; this study provides interview-based evidence rather than a complete institutional audit.

The concept brings the theoretical perspectives into a complementary relationship. The social model explains how inaccessible routes, buildings, and institutional arrangements can produce exclusion rather than treating exclusion as an inevitable consequence of impairment (Oliver, 1990). The Transactional Model of Stress and Coping explains how students appraise those demands in relation to perceived risks, time, energy, coping resources, and academic consequences (Lazarus & Folkman, 1984). UDL contributes a design orientation: institutions should anticipate learner variability through predictable communication, flexible participation, and accessible learning and assessment arrangements (CAST, 2024). UDL does not replace physical access requirements, and individual coping does not transfer responsibility for inaccessible environments to students. Together, the perspectives frame functional educational accessibility as an institutional condition for equitable participation. The concept remains provisional and requires further testing across institutions and with additional forms of evidence.

5.6 Limitations and interpretation

The findings should be interpreted in light of the study's scope. The qualitative case study involved four student-teachers from four Colleges of Education in the Eastern Region, and the fieldwork was conducted in January 2017. The accounts provide detailed insight into participants' experiences but are not intended to estimate how frequently particular barriers occur across all Colleges of Education in Ghana. Furthermore, the findings describe conditions reported during the fieldwork period and should not be treated as a current accessibility audit of the institutions. Follow-up research, including updated campus audits and interviews with students, staff, and facilities personnel, would be needed to establish present conditions and assess changes over time.

Despite these limitations, the study offers a focused account of how mobility-related barriers may shape educational participation and identifies practical areas for institutional attention. The findings are best read as an analytically informative contribution to discussions of inclusive teacher education, rather than as a statistically representative account. Future research could examine functional educational accessibility across a wider range of institutions and investigate how route accessibility, advance communication, examination arrangements, and disability-support systems relate to participation and student wellbeing.

6. IMPLICATIONS FOR POLICY AND PRACTICE

6.1 Campus accessibility audits

Colleges should conduct comprehensive accessibility audits that extend beyond entrances and ramps. Audits should examine dormitories, classrooms, laboratories, administrative offices, libraries, dining facilities, recreational spaces, water sources, examination rooms, and pathways between facilities.

6.2 Accessible campus routes

Institutions should identify and prioritize accessible routes connecting major student facilities. Accessibility should be understood as a connected network rather than a set of isolated features.

6.3 Examination accessibility

Examination locations should be communicated in advance, and unnecessary last-minute changes should be



avoided. When changes are unavoidable, students with mobility impairments should receive adequate notice and appropriate assistance.

6.4 Inclusive curriculum and instruction

Teacher educators should incorporate flexibility into teaching, assessment, and participation. Reasonable adjustments may include accessible learning materials, alternative methods of participation, assistive technology, and accessible classroom locations.

6.5 Disability support services

Colleges should strengthen disability support systems so that students do not have to negotiate accessibility barriers individually. Coordinated services may include accommodation planning, examination arrangements, assistive technology, counselling, academic support, and communication between students and institutional authorities.

6.6 Student voice and teacher education policy

Students with disabilities should participate in decisions concerning accessibility. Teacher education institutions should prepare future teachers to recognize how physical environments, instructional practices, assessment procedures, social attitudes, and institutional policies can facilitate or restrict participation.

7. LIMITATIONS

The study involved only four participants, reflecting the limited number of student-teachers with orthopaedic impairments enrolled in the participating institutions at the time. The research was conducted in January 2017 and should not be interpreted as a current physical accessibility audit. The study focused on students with orthopaedic impairments and should not automatically be generalized to students with other forms of disability. Its qualitative design emphasizes depth of experience rather than statistical generalization. Despite these limitations, participants' accounts provide insight into how environmental conditions can interact with impairment to influence educational participation.

8. CONCLUSION AND RECOMMENDATIONS

This study demonstrates that educational inclusion cannot be adequately evaluated by admission and physical presence alone. Participants described long distances, high buildings, steep ramps, inaccessible structures, and unexpected examination-room changes as conditions that created additional demands for student-teachers with orthopaedic impairments.

The findings support a social/environmental understanding of disability that recognizes the role of institutional and physical environments in producing disability-related disadvantage. The Transactional Model of Stress and Coping helps explain differences in how students experience and respond to environmental demands, while UDL offers a framework for anticipating learner variability. Together, these perspectives inform the concept of functional educational accessibility.

Colleges of Education should audit campus routes and facilities, communicate examination locations in advance, strengthen coordinated disability support, and involve students with disabilities in accessibility planning. The study's fieldwork dates to January 2017; current institutional conditions should be established through new audits or follow-up research rather than inferred from these historical accounts.

DECLARATIONS

Ethical approval and consent

The underlying doctoral research incorporated procedures for informed participation, confidentiality, anonymi-



zation, and the right to withdraw. The exact institutional ethics committee/review board name and clearance number must be inserted from the original research documentation before submission. The journal's guidelines indicate that manuscripts requiring ethical clearance cannot proceed without the clearance documentation.

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