

INCLUSIVE INSTRUCTIONAL STRATEGIES FOR A FASHION PRACTICUM COURSE IN UNIVERSITY

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ABSTRACT

The challenges of implementing inclusive vocational education for students with special educational needs in higher education are particularly complex, especially in a practice-based course that emphasizes skills and competencies. The purpose of this study, therefore, was to explore strategies for teaching students with special educational needs in a fashion practicum course. A classroom action research design with a Longitudinal Quasi-Qualitative approach was conducted over the span of one semester, involving three students identified as requiring mild, moderate, and severe special needs. Participant observation, in-depth interviews, and documentation were used to collect data. The research design was a classroom action research using the longitudinal quasi-qualitative approaches based on iterative cycles of planning, acting, observing, and reflecting. The data were analysed qualitatively for patterns in instructional practices and student responses using thematic analysis. Results showed that across the cohort, a single delivery model of teaching introduced in stage 4 failed to engage learners with medium and high-level needs because of an incompatibility between task demands and learner attributes. On the other hand, with the second cycle, differentiated tasks, simple instructions, and tailored sensory stimuli, the students were engaged, and learning became accessible. This study shows that, despite the advantages of inclusive vocational education, autonomous adaptive personalized instructional design integrating cognitive, emotional, and sensory dimensions is a fundamental element in achieving inclusive vocational education. An adaptive learning ecosystem with choice has been tentatively suggested as a sustainable solution to improve independence, inclusion, and work readiness.

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INTRODUCTION

Education is a basic right of every individual, irrespective of physical/ cognitive/ social circumstances. Students with special educational needs (SEN) observe the right to receive fair and inclusive learning experiences [1], [2]. SEN students have a range of diverse and complex needs that may be described as mild, moderate, or severe [3], which necessitate different approaches to instruction. Disabilities are generally multiple at the moderate and severe levels, which can require extensive intervention during learning [4]. On the other hand, at the mild level, including those described as slow



learners, there are generally not recognisable intellectual deficits, but adaptive instruction is considered a prerequisite for optimal educational success [5]. This indicates that, ultimately, any advancement in inclusive education will hinge upon the way educational systems can adapt to meet a variety of learning needs with more flexible and responsive strategies [6].

Higher education institutions are strategically positioned to facilitate equitable and inclusive access to tertiary education for students with special educational needs [7]. Many studies show SEN students can be squeezed into higher education, leading to a better quality of life and employment [8]. In practice, these students use a variety of assistive devices to facilitate the mobility and learning processes, e.g., hearing aids, wheelchairs, and dynamic switches [9]. Intervention strategies include adaptive instructional approaches through auditory modalities among visually-impaired students, lip-reading among students with hearing impairments, and the provision of social support by peers or family members for those with mobility constraints [10]. With adequate support structures, SEN students can participate in learning activities and complete academic tasks, cementing the need for sustainable, inclusive systems at higher levels of education.

While access to more inclusive education learning is gaining increasing salience in higher education, limited research has focused on instructional design models for vocational practicum courses designed for students with SEN. Interestingly, literature relating to inclusive higher education has addressed matters such as policy implementation, accessibility, assistive technologies, and classroom adaptations [11][12][13], but less research has been conducted in practice-based learning environments focused on the use of psychomotor skills and creative /production activities. So, in the given instances of vocational education, especially practicum courses. SEN students are included in a broader group of obstacles directly linked to task completion, workroom practices, group study, and skills assessment [14][15][16].

Nevertheless, a widely established pedagogical framework that brings together data-responsive adaptive instruction with tailored practicum activities and competencies achievement for all has yet to be organized around vocational learning environments. As a consequence, many teachers do not know if their measures for accommodating SEN students are effective, and they therefore rely on anecdotal evidence or use ad hoc strategies when teaching courses on practicum-based courses. These results underscore the necessity for contextually embedded instructional models attuned to reflect the special characteristics of vocational practicum learning appropriated by students with SEN.

Additionally, research focusing on inclusive pedagogy in relation to fashion education is scarce, particularly in practicum-based learning environments. Existing research on SEN students in higher education has tended to focus either on broader academic subjects, inclusive policies, or classroom-based pedagogy and assessment [17][18], while fashion education is characterized by a different set of learning paradigms, embedding studio practice, garment construction, and/or manipulation of textiles with attention to visual creativity, collaborative production, and performative modes of assessment [19]. Practical and industry-aligned learning requires entirely different, adaptive instructional strategies compared to conventional theoretical instruction.

However, limited empirical research has been conducted on how lecturers adapt fashion practicum courses for SEN students, especially in developing country contexts [20][21]. Few studies have explored how inclusive instructional practices enable curricula to respond to diverse student populations in higher-order vocational creative cognitions associated with the fashion discipline, leading to a significant gap around what effective pedagogical approaches, assessment adaptation, classroom interaction, and learning support mechanisms look like across other forms of vocational creative disciplines. Thus, this research provides originality because it examines pedagogical approaches in fashion practicum courses for students with SEN and enhances the understanding of more effective vocational education practices that address diverse learning needs.



Moreover, an emerging trend is the rising rates of students with intellectual disabilities attending higher education. So this opens up challenges for lecturers who have little experience in working with such students. This, in turn, also presents a pedagogical problem as to how to assign tasks. A task standardised to those of typically developing students might be considered unfair for children with SEN, but if differentiated, it can be criticised for not allowing the learning outcomes (LOs) to be fully achieved. Consequently, this study aims to investigate the pedagogical approaches undertaken with fashion practicum courses for students with SEN.

METHOD

This study employed a classroom action research design using the Longitudinal Quasi-Qualitative (LQQ) method. The primary approach employed by LQQ is serial interviews [22][23]. It builds on emergent themes from one interview to guide the interviewing strategy for other interviews. The intervals between data collection allow the research team to examine the data and adjust interview guides [24]. In this study, in-depth interviews and observations were utilized to obtain rich data aligned with the research objectives. So, this approach enabled continuous monitoring and examination of students with SEN throughout the fashion practicum learning process over one academic semester.

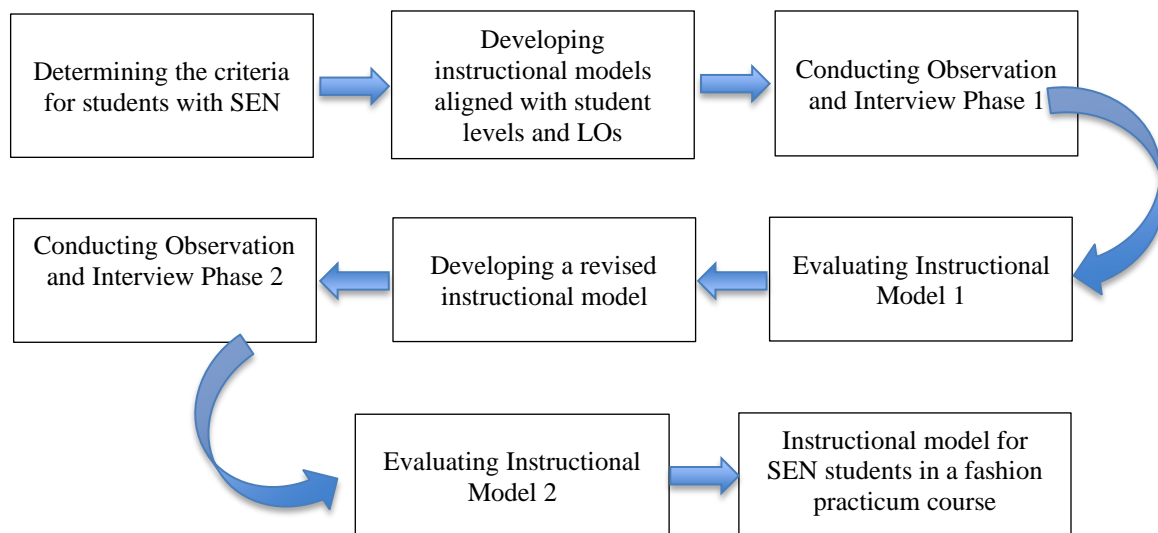


Figure 1. Research Procedure

As presented in Figure 1 regarding the overall research procedure conducted in this study, the LQQ method was implemented in two iterative cycles to identify appropriate instructional strategies for students with SEN in practicum courses. The study began with the identification and selection of criteria for SEN students to be observed. In this research, three levels of SEN students were categorized: mild (slow learners), moderate (students with mild autism and minor intellectual impairments who are still able to communicate, although with frequent memory limitations), and severe (students who are unable to engage in two-way communication, have limited emotional regulation, and are unable to comprehend instructional tasks provided by the lecturer during the learning process).

Subsequently, the lecturers developed instructional models tailored to three students with SEN with different characteristics. The next step involved conducting the first round of observations and interviews. The lecturers then evaluated the instructional process in collaboration with the teaching team and institutional leadership. Based on the results of the initial evaluation, a revised instructional model

was developed. This process was carried out over two cycles, resulting in an instructional model appropriate for SEN students in a fashion practicum course.

The participants in this study were three SEN students enrolled in a fashion program, categorized according to the criteria described in the previous section. In addition, interviews were conducted with a shadow teacher who assisted the student with severe needs. Interviews were conducted during the learning process and throughout the observation period to ensure that the students did not feel they were being treated as research subjects.

Furthermore, the researchers created identification codes for all participants of all interviews, observations, and focus group discussions to ensure anonymity in data analytical processes. The identifying units were the different student participants (S1, S2, and S3). T1 and T2 = The lecturer teaching the practicum courses, TS = The shadow teacher. Parents who were interviewed for this study were labelled as P1 and P2. Moreover, data collection method codes are WWC for interviews, OBS for observations, and FGD for focus group discussions.

The response items were analysed according to a systematic thematic analysis process. Quantitative data from interviews, observations, and focus group discussions were transcribed verbatim and read through multiple times to achieve familiarization with the data. Second, initial coding was performed using significant statements to find repeated patterns and significant experiences related to inclusive practicum learning. Third, as an initial step to form the themes, codes were collated into potential broader categories. Fourth, the themes were compared across participants and data sources against each other for consistency and conceptual relevance. Fifth, the themes were delineated and interpreted by aligning them with research objectives and the theoretical framework. Finally, the results were synthesized into thematic narratives that contained supporting direct quotes, observational descriptions, and documentation data to show how interpretations were co-constructed from the data.

Validity strategies were used to maintain the study's credibility and trustworthiness. Data triangulation by obtaining, comparing, and contrasting information from multiple participants, students, lecturers, the shadow teacher, and parents, to determine consistency of perspectives across different stakeholder groups, was done. Method triangulation was also used by combining interviews, classroom observations, focus group discussions, and document analysis. The researchers used an iterative coding approach, comparing findings from these different methods to corroborate cross-cutting themes and reduce interpretive bias. Additionally, investigator triangulation by means of collaborative discussion among researchers during coding and theme development was performed to limit potential researcher bias. To improve the credibility of preliminary findings, member checking was performed, involving returning selected interpretations of interviews and a thematic summary to participants to confirm the adequacy of descriptions. Further, the practicum provided an opportunity to build on contextual knowledge through multiple observations and activities, a process that may strengthen understanding of the context and trustworthiness of findings.

RESULTS AND DISCUSSION

The findings of this study are presented in two sections corresponding to the research cycles, namely Cycle 1 and Cycle 2. A detailed description of the results is provided as follows.

Cycle 1

In the first cycle, the lecturers developed two instructional models. The first instructional model was applied to students with mild needs (slow learners) and was equivalent to that used for regular students. In the second instructional model, the lecturers simplified the first model to better accommodate students' learning needs. The instructional models developed are presented below.



Table 1. Instructional Models in Cycle 1

LOs	Subject Matter	Assignments	Remarks
Students are able to operate a high-speed sewing machine to perform straight stitching	Perform straight stitching at 2 cm intervals	<ul style="list-style-type: none"> - Cut the fabric to a length of 30 cm and a width of 20 cm. - Draw horizontal guideline markings at 2 cm intervals using yellow tailor's chalk and a ruler. - Sew along each marked line, beginning with a backstitch to secure the seam and ending with a backstitch to lock the stitch. 	The task is the same as for students with mild and moderate levels.
Students are able to operate a sewing machine to perform straight stitching (portable sewing machine)	Perform straight stitching at 2 cm intervals	The task is the same as for students with mild and moderate levels	Instructional approach for students with severe levels

In Table 1, during the first cycle, the lecturers implemented the same instructional approach for students with mild and moderate levels of SEN as that used for regular students. This decision was based on the assumption that students at these levels were able to engage in verbal communication. The instructional approach was applied in the classroom, and the results from interviews and observations are summarized as follows.

During the first week of the practicum course in basic sewing, students were introduced to the operation of a high-speed sewing machine for straight stitching. The student with mild needs did not experience significant difficulty in operating the high-speed sewing machine. However, the student repeatedly asked the same questions to the lecturer, although the lecturer did not provide direct assistance in setting up the machine.

On the other hand, the student with moderate needs struggled to connect parts of a sewing machine. This implied that the professor had to give him some individual attention as he needed help figuring out how to configure the high-speed sewing machine. To explain this, the lecturer demonstrated how to install and remove the machine material. The student, in turn, replicated the demonstration. That cycle was executed three times, after which the student with moderate needs could complete it independently.

From the first to the third week, both the students with mild and moderate needs still required assistance in setting up the high-speed sewing machine. They frequently forgot the correct position of the machine needle during installation. Although the installation of other components was generally correct, the needle was often positioned incorrectly, resulting in poor stitching quality.

Regarding the assigned tasks, both the students with mild and moderate levels of SEN demonstrated an understanding of how to measure and draw guidelines, create 2 cm interval markings, and perform stitching using a high-speed sewing machine. By the fourth week of instruction, they had also begun to control the machine speed using the foot pedal.

In contrast, the student with severe needs was provided with accommodations by using a low-speed sewing machine. This adjustment was made by the lecturer to ensure the student's safety during



the practicum. The student brought a personal sewing machine from home to enable consistent practice using the same equipment both at home and on campus. During the learning process, the student with severe needs was continuously assisted by a shadow teacher due to limited emotional regulation. The lecturers acknowledged that they did not possess sufficient expertise to manage the students effectively during emotional distress.

Learning for an independent student with severe needs required full assistance. The student had yet to be able to realize how they could accomplish the task of threading up their sewing machine and drawing lines on fabric independently. The shadow teacher kept guiding, but the student distracted herself a lot of times from her tasks. She discovered that the student was sometimes distracted by peers or engaged with a smartphone, and if the student's mood took a negative turn, he tended to be passive and unwilling to engage. This study found that nearly 95% of the work was done by the shadow teacher.

In addition, an evaluation of how the instruction process worked for these three SEN students was conducted according to their LOs from week one to week four. The evaluation data are those from two practicum lecturers and a shadow lecturer, as shown below.

“Mild and moderate students need individualized support in practicum courses. This support is a must to strengthen what was practiced in the session. Generally, these are repeated at most three times to make sure they understand how to execute the tasks allocated for that meeting. However, depending on the educational needs of each child, dual support is provided to students with much more severe needs by both the lecturer and the shadow teacher. The lecturer helps by explaining the material slowly and repeatedly, while the shadow teacher manages to keep a student with severe needs focused and in a good mood during class. During the session, the student is also given 10 to 15 minutes of break time to regulate mood, usually by leaving the classroom and walking around the campus environment. This is conducted two to three times during the session to maintain the student’s emotional stability (T1 and T2_WWC_11022026).”

On the other hand, the interview results with the shadow teacher are as follows:

“I try to help transfer the lecturer’s instructions to the student with severe needs in accordance with the student’s current mood. If the mood is not conducive, I allow some time for the student to regain focus and emotional balance before continuing the task. In fact, the student experiences boredom when performing repetitive activities, while the material focuses on straight stitching. I have repeated this material at home; however, the student is often unwilling to practice. On the other hand, the lecturer requires the student to repeat the task until they are able to sew straight along the guideline. This is too difficult for the student (TS_WWC_04022026).”

Cycle 2

The second cycle represents an improvement of the first cycle, resulting in a revised instructional model as presented in Table 2.

Table 2. Instructional Model in Cycle 2

LOs	Subject Matter	Assignments	Remarks
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Students are able to operate a high-speed sewing machine to perform straight stitching	Perform straight stitching following the wave-line and zigzag-line patterns	<ul style="list-style-type: none"> - Cut the fabric to a length of 30 cm and a width of 20 cm. - Draw guideline patterns according to the specified line designs using yellow tailor's chalk and a ruler. - Sew along each marked line, beginning with a backstitch to secure the seam and ending with a backstitch to lock the stitch. 	Instructional approach for students with mild and moderate levels
Students are able to operate a sewing machine to perform straight stitching	Perform straight stitching at 2 cm intervals	<ul style="list-style-type: none"> - Cut the fabric into a size of 30 cm long and 20 cm wide. - Using a ruler and tailor's chalk in the colour of their choice, draw horizontal guidelines at 2 cm intervals. - Sew every marked line starting with a backstitch to set the seam, and ending in a backstitch to lock. 	Instructional approach for students with severe levels

According to Table 2, the content of this basic practicum course is designed weekly for the students with mild and moderate levels of SEN, followed by a semester learning plan. By contrast, for students with the greatest need, instruction returns to the way it was in week one, only guideline markings around stitch lines are marked in tailor's chalk, this time in the student's choice of color. This approach aims to help that student become incentivized by understanding straight stitching as a fundamental skill. The lecturer implemented this strategy as a form of stimulus to support continued engagement of the student with severe needs in the practicum course.

Comparing the first and second cycles, the instructional model in the first cycle generally followed the predetermined learning plan, with differences primarily in the type of sewing machine used. Students with mild and moderate needs used the same machines as regular students, while the student with severe needs used a portable sewing machine with a controllable speed. In addition, the tasks assigned were identical to those given to regular students, without considering the preferences or individual needs of the student with severe needs.

In the second cycle, the lecturers developed a differentiated instructional model following a four-week evaluation of the learning process. The evaluation findings indicated that the student with severe needs had difficulty clearly seeing the guideline markings drawn with yellow tailor's chalk when the fabric was placed under a sewing machine equipped with yellow lighting. Based on this finding, the lecturer modified the approach by using tailor's chalk in the student's preferred color to improve visibility and learning effectiveness.

Discussion

Findings from this research show that the effectiveness of practicum-based learning for students with SEN is driven by the change in instruction level more so than simply downward-task simplification for technical skills only. This study revealed that the instructional model in cycle one favored a uniformity of learning expectations for students with mild and moderate needs, while students with severe needs were differentiated through a portable sewing machine. As a result, the support provided did not fully address the cognitive, affective, and sensory dimensions of the learners. In contrast,



improvements in the second cycle through task modification, more structured repetition, and the use of tailor's chalk in colors aligned with the preferences of students with severe needs demonstrated that learning accessibility increased when instructional design was genuinely personalized. These findings are consistent with international meta-analyses showing that inclusive settings can yield cognitive and psychosocial benefits for students with learning difficulties; however, such benefits are highly dependent on the quality of pedagogical support provided [25]. In other words, the results of this study support the global argument that effective inclusion is not merely about physical presence in the classroom, but about the quality of instructional fit between task demands and students' learning profiles.

Comparatively, these findings are also consistent with studies conducted in Australia, which indicate that teachers with high self-efficacy do not merely understand the concept of inclusion but translate it into practices that emphasize accessibility, student success, and the development of self-confidence [26]. This aligns with the present findings, where lecturers and shadow teachers played a critical role in bridging students' limitations, particularly through repeated demonstrations, individualized support, and the management of learning-related mood. Other studies conducted in Saudi Arabia have shown that strong inclusive teaching practices significantly predict emotional inclusion, social inclusion, and academic self-concept among students with special educational needs [27]. Thus, the present study extends these findings into the context of practice-based vocational learning.

In Saudi Arabia, research in the context of vocational education indicates that while vocational curricula for students with intellectual disabilities are generally regarded as adequate, the learning activities dimension is less robust due to a low level of experiential engagement, insufficient individualization, and a lack of task-based orientation [28]. This study adds further operational insights at this point by showing how they can actually create individualized activities through adapting tools, colors, pace, and intensity of instructional support.

However, relative to international literature on work-integrated learning, this study reflects a similar finding, which is a formative reliance on support. They revealed that about 95% of the tasks executed for the student with severe needs were done by a shadow teacher, evidencing that they had access to learning, but there was not sufficient promotion of performative independence. Their findings corroborate research from Australia, which documents systemic barriers, disclosure fatigue, and a discordance between the need for accommodation and either the responsibility on some students with disabilities) or others' support to obtain those accommodations in work-integrated learning contexts [29] [30].

Thus, in line with the latest international developments in research, the study findings imply that future phases should not be confined to adaptive assistance alone, but rather extend towards gradual independence with fading support (e.g. through peer-assisted practice and staged task design) where assistance is systematically reduced over time. Academically, focusing on the transition from supported to autonomous vocational functioning, inclusive practices need to go beyond successful completion of practicum tasks during instructional sessions.

CONCLUSION

For students with SEN to develop their practicum learning, it requires lecturers' decisions to design instruction that is holistic, child-centred, and differentiated. The results indicated that the same instruction across students during Cycle 1 was not enough to support student learning, especially for those who were moderate and severe learners. In contrast, the second cycle (which included task modification, simplified instructional materials, individualized stimuli, adaptive guidance, and sensory-responsive approaches) permitted students substantially greater participation in learning activities and



improved engagement. These findings show that the successful implementation of inclusive vocational education is dependent on the extent to which instructional design matches learners' cognitive, emotional, behavioral, and sensory characteristics. As such, this research is both timely and imperative to the discourse of inclusive vocational education as it investigates pedagogical practices for SEN students in practice-based learning environments, a largely under-examined area due to increasing demands for inclusive higher education and workforce preparation.

Furthermore, these findings may basis off compelling new ways to create a learner-improving adaptive learning ecosystem model that encompasses differentiation of instruction, structured social support, and methods for achieving gradual increases in independence supplemented by adaptive technologies and sensory-based style approaches to promoting sustained optimal stretch-learning. For practical use, this model of adoption is suitable for implementation in inclusive workplace training through changes in tasks, visual aids, and job coaches. However, more studies are needed to investigate the model's generalizability across different occupational domains, assess its long-term influence on work autonomy, and develop interventions to reduce reliance on assistance staff. Finally, further advances would progress toward an inclusive, adaptive, and sustainable vocational education system.

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