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TABLE OF CONTENT

Modelling student trust profiles in an online mathematical course – a South African perspective

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Abstract

Recent worldwide events necessitated many tertiary education institutions to move from contact to emergency online teaching in a very short time. Emergency online teaching differs from distance learning in which an implied assumption exists that students have unlimited access to online platforms, infrastructure, and learning material. Although lecturers were expected to deliver the same quality of teaching as before and student enrolment numbers increased, the completion rates have not necessarily improved. An upsurge in student dishonesty was also reported. Electronic invigilation approaches like the use of proctoring software can assist in mitigating devious practices but the technology required must be reliable and steadfast. Systemic challenges in South Africa caused significant disparities in academic achievement among students of varying socio-economic backgrounds. Studies, focusing mainly on text-based assessments, are widely conducted to determine the feasibility of using artificial intelligence (AI) in establishing the level of academic integrity in tertiary education institutions. Courses that are mathematical in nature, present the ideal set of tools to establish what will be referred to as a student trust score. Students often tend to write online tests in groups and submit the same responses for questions that have different input values. Although typing errors may occur, and peer facilitation is encouraged, dishonesty in the form of copying answers should be countered. This study was conducted in an online learning environment in South Africa with the goal of categorising students according to the response patterns that were identified when completing online assessments. The methodology includes response time analysis to determine collaboration patterns and latent class analysis to classify students with similar behaviour patterns in online assessments. These were combined with item response theory to model an integrity profile or trust probability score. The use of this model highlighted individuals who tended to collaborate with peers as well as groups of students who collaborated frequently. The approach was validated using individualised control questions in assessments. The model enabled lecturers to determine the level of content mastery of a class, identify at-risk students and caused a notable decrease in the level of student dishonesty. Students gained insight into the link between academic effort and performance without having to worry about the infrastructural- and societal challenges experienced in the South African context.

Keywords

Academic dishonesty, item response theory, latent class analysis, online learning, response time analysis, student integrity trust score

1.   Introduction

Apart from global health and safety repercussions, the COVID-19 pandemic necessitated most educational institutions to make an extremely hurried move to emergency online teaching (Lim, 2023) (Tang, Gu, & Xu, 2022). It is important to realise that emergency online teaching, is not synonymous with distance learning (Landa, Zhou, & Marongwe, 2021). In short, distance learning is an environment in which education is provided, and achieved, wherein the lecturer is not physically present in the same venue or at the same time as the student(s). Furthermore,

the learning event is directed by the student and the relationship between the lecturer and the student is maintained by different forms of technological media. In many cases, there is some flexibility in the content to be learned (Andrade & Zerbini, 2019). As with full-contact teaching, the learning experience can be meaningful if both parties understand what is expected from them at the onset of the program. Herein lies the problem with emergency online teaching.

Full-contact teaching is characterised by actual face-to-face meetings between the lecturer and student with set class and assessment times, supplemented with notes and revisional material typically on an online learning management system (LMS). Assessments are usually invigilated and in a closed-book format. If a student signed up for this type of teaching and learning experience and was compelled by the institution for reasons beyond the control of either party to move to emergency online learning, problems arise. This was especially true because of the speed at which this was done in 2020 (Hodges, Moore, Lockee, Trust, & Bond, 2020). One of the major problems that was reported involved different forms of student dishonesty (Beruin, 2022) (Eshet, 2023).

Although both distance and emergency online learning involve non-contact modes, comparing the two can be very dangerous. There is already the stigma to online learning of being inferior to face-to-face learning and the less-than-ideal way this shift was made further compounded this impression (Hodges, Moore, Lockee, Trust, & Bond, 2020). A great variety of design solutions for distance learning have been developed over years of research (Rizaldi & Fatimah, 2020). These include distributed learning, mobile learning, blended learning, online learning, and more. In contrast, the move to emergency online teaching was realised within one month in May 2020 at the North-West University (NWU) in South Africa. In most cases, the bare basics involved lecturers receiving training in an online presentation platform and continuing with an extension of the semester plans created at the start of the year. Depending on the narrative it could be reasoned that most of the solutions designed for distance learning were realised. However, challenges in South Africa related to power outages, bandwidth limitations, and poor service delivery teamed with reports of privacy, racism, and ableism in proctoring software (McKenna, 2022) caused significant disparities in academic achievement among students of varying socio-economic backgrounds (Landa, Zhou, & Marongwe, 2021). Even though in some programs effective teaching could be established, successful learning could not be guaranteed because of the blindfold effect caused by the online mode of delivery.

The motivation for this study sprouted from the helplessness felt by lecturers when they realised that they would never really know if students had been dishonest in an online assessment. Proctoring, automatic plagiarism detection software, and the use of large question pools are popular prevention instruments in assessments rich in text-based questions, even though student responses to the same questions may vary. For example, "my address" is regarded as similar to "my house". Fields with content that is mathematical in nature, like Statistics, Mathematics, Operations Research, Decision Support Systems (DSS), Physics, and others, may have questions for which the answer is the same in all cases. For example, 2 + 3 = 5 will always hold. However, these types of courses present a unique set of tools for improving the quality of online assessments while reducing the possibility of academic dishonesty.

In this research, the flexibility afforded by using mathematical equations in the third-year DSS module presented at the NWU was employed to inhibit students from completing online assessments together with their peers. The approach reduced the need for large question pools while still ensuring that students received individualised questions in assessments. The module content was used to set assessment questions. Analysis techniques including latent class analysis, response time analysis, and item response theory were used to generate what will be referred to as a student trust score for each student in the group. As the semester progressed, the average trust score improved for reasons to be discussed later in this article.

The remainder of this paper is organised as follows: In the next section, recent research related to the assessment approach and analysis techniques is discussed. This is followed by Section 3 wherein the assessment approach in combination with the analysis techniques are discussed. Interesting statistics on the STPs generated and their evolution as the semester progressed are discussed in Section 4. This is followed by a summary of the study and some concluding remarks, in the last section.

2.   Related work

The methods that were utilised for this study included latent response time analysis, class analysis, and item response theory. The purpose of this section is to define these techniques and provide some background on some different applications of each, relating to the education sector.

2.1. Response time analysis

Response time analysis (RTA) describes a method to measure the speed with which a student responds to a question (Khanna, 2022). The measurement is commonly used to evaluate effectiveness in computer-related environments like software, web, or network technology development, to name but a few (IBM, 2023). It is also an important metric to use when developing new technology to be used in educational environments. In a 2020 study, multiple regression was used to investigate the variables that predict student response times in testing the mathematical literacy of ninth-grade students in Turkey (Gökçe & Yenmez, 2020). It was believed that this information would demonstrate the successful implementation of a newly developed online testing system by improving scoring speed, supporting new item formats, and determining which variables influenced student response times.

Numerous studies have been done using RTA to determine cheating patterns in online tests (Boughton, Smith, & Ren, 2016) and learning material mastery (Kyllonen & Thomas, 2020). Statistical methods, like Bayesian approximation, were used by Boughton *et al.* (2016) to identify irregular test-taking behaviours of students. The response times of students were modelled according to the lognormal RT model and a hierarchical RT model. Both models aimed to determine a pattern according to which students tended to respond to certain types of questions and flag students that may be dishonest, as well as questions which had been compromised.

Another such study in which an analysis was performed post-assessment, is the work of Rios and Deng (2021). The aim was to determine the rapid guessing effect of placing a threshold on assessment response times. Lyu and Bolt (2023) demonstrated that the relevance of content trait level and the individual styles of responding predicted the response times in assessments. In contrast to these types of applications, the focus of the work presented in this paper is to use the response time data upon completion of each assessment to identify students who seemingly collaborated with their peers. Although RTA is an approach that can be applied to many different fields, not many methodologies similar to that implemented in this paper were found in tertiary education. RTA was used to identify students with similar response patterns during online assessments. These results were used to perform the next step, latent class analysis.

2.2. Latent class analysis

According to a definition supplied by Porcu and Giambona (2017), latent class analysis (LCA) is a numerical technique with which entities or people are divided into groups of unobserved variables based on responses made to a set of observed variables. This type of analysis is done on many aspects and fields in the educational environment all over the world. Some examples follow.

Success in a distance learning program is highly dependent upon the attitude and direction of the student. Lecturers, on the other hand, have the responsibility to be creative while providing the ideal learning conditions (Rizaldi & Fatimah, 2020), including facilitation opportunities. In a study performed by Denson *et al.* (2022), LCA was utilised to demonstrate how college students can be classified according to their disposition to learn from diverse others. The data were collected at the University of California for the years 2010, 2012, and 2014. Their study investigated the patterns in the participants' openness to learn from diverse others and assessed the relationships between those patterns and the understanding of the diverse group(s). The students could be classified into groups described as global openness, openness to visible diversity, openness to less visible diversity, and low openness. Other relationships regarding gender and awareness of diversity.

In another application in the higher education industry, Whitelock-Wainwright *et al.* (2021) performed an LCA on what students expected to gain from learning analytics services. Learning analytics encompasses the analysis and representation of data relating to students to improve the learning event and visualise student performance (Clow, 2012). It was found that although the expectations of students relating to ethical and privacy elements were consistent over all groups, their expectations of service features such as learning visualisations were erratic.

More related to the work in this article, though, Kaqinari *et al.* (2022) did an LCA aiming to categorise lecturers according to their use of educational technology in switching to online teaching during the COVID-19 pandemic. The classifications that were made included presenters (focusing on the delivery of content), strivers (who worked towards social interaction), routineers (those who were prepared for online learning), and evaders (lecturers who evaded the use of technology for education). The ages of the lecturers were found to be a significant factor in dividing them into these classes.

Upon identifying students with similar response patterns, LCA was used in the study discussed in this paper to further categorise them into groups of suspected collaboration. The resulting set of data was subjected to an adapted form of item response theory, which is discussed next.

2.3.   Item response theory

Item response theory (IRT) uses theoretical psychometric methods to examine responses to categorical items (Park, et al., 2022). IRT is commonly used to predict the responses that may be expected from specific test items.
Boduroğlu and Anıl (2023) utilised explanatory item response models to investigate the effects of personal and item predictors in a set of mathematics exams. The personal variables that were used in their model included gender and type of school and the item variables were content and cognitive domain, as well as booklet type. Upon implementation, they found that the item variables played a small role in correctly predicting students' responses. This improved when the personal variables were included in their model.
On a wider level, Park *et al.* (2022) applied an explanatory item response model in conjunction with machine learning methods to predict latent student abilities and the difficulty of test items. These predictions were used as inputs to different machine learning models wherein students were classified according to unrealised responses of new students to existing items, unrealised responses of existing students to new items, and missing responses of existing students to existing items. Their work showed that combining an explanatory IRT model with machine learning greatly improved the classification into the categories stated. IRT is often employed when developing learning systems, especially in dynamic online environments. Pliakos *et al.* (2019) also combined IRT with machine learning but with the purpose of item, or question selection upon an estimation of student ability, specifically for new learners.
When formulating an education approach focused on students, it's crucial to consider the unique learning traits of the students. Park *et al.* (2023) performed a study to categorise students into groups according to similar traits of cognitive behaviour in problem-solving. Their work combined IRT with RTA by considering correct and incorrect item responses together with student learning characteristics to categorise them according to their problem-solving patterns. This approach provides valuable insight into the methodology that was applied to the research discussed in this article. The method follows in the next section.

3.   Method

The subfields from which the learning outcomes for the third-year DSS module at the NWU originate include topics that are mathematical in nature (NWU, 2023): decision theory, forecasting, inventory control, project management, queuing theory, simulation models, and Markov analysis. At the NWU, the teaching and learning approach during the second semester of 2020 remained online as a preventative health measure. This meant that the topics listed had to be assessed using the LMS while upholding a high standard of teaching.
In South Africa, the unique demographic distribution of students forces a lecturer to consider very specific issues when constructing online assessments. These issues include load shedding (not all areas in the country have electricity at the same time), connectivity, poor service delivery, and little or no access to technology. This meant that online assessments had to be available for extended periods necessitating the use of large question pools from which semi-individualised online tests were automatically generated by the LMS. Furthermore, lecturers were encouraged to use multiple communication platforms like WhatsApp Messenger, e-mail, and the messaging service within the LMS, to name a few. In most cases, students also had their own communication group to which the lecturer had no access. It was found that students often completed online assessments whilst connected to such a group (Beruin, 2022), meaning that submission rates were low soon after a test was published but increased at an exponential rate as the closing date and time approached (San Jose, 2022).
To counter this trend while maintaining the standard of assessment, an algorithmic approach was developed to automatically compile and grade individualised questions for assessing topics with mathematical interrelationships. Due to the mathematical nature of the content, MS Excel was used as an assessment tool with the implementation of the algorithm in Visual Basic for Applications. As an example, consider the mathematical equation for calculating the economic order quantity (Q^*) of a product in the subfield of inventory control.

$$Q^* = \sqrt{\frac{2DC_o}{C_h}} \qquad (1)$$

where D is the annual demand for a product, C_o is the ordering cost, and C_h is the cost of holding the product in inventory. Suppose these values were provided: $D = 1000$ units, $C_o = \$10$, and $C_h = \$0.50$, then the answer to this question will be 200 units. Instead of using fixed values for each one of the variables, the same question was used for each student but with different values for each one of the variables. The only inputs to the algorithm were the upper and lower bounds for each of the automatically determined variable values. The mathematical relationship was then used to grade the question. This meant that little to no students ended up with a combination of input values that would result in the same answer.

An approach that combined RTA, LCA, and IRT was utilised to determine submission patterns and establish a student trust profile. The analyses were performed consecutively to investigate the effectiveness of the new approach to online assessment.

3.1.   Data collection and processing

During the semester, five online tests were conducted using the individualised testing system. The population size was 127 students. To cater for possible issues relating to poor service delivery like power interruptions and connectivity problems, students were granted four opportunities for each assessment with the highest score holding. The questions in each opportunity were different from those in the previous opportunities. For each of these tests, the statistical information provided by the Sakai-powered LMS was recorded. This is shown in Table 1.

Table 1: Statistical data available for each assessment

Log type	Fields provided	Example
Event log	Student number	12345678
	Start date and time	Sep 5, 2020 9:24 PM
	End date and time	Sep 5, 2020 9:55 PM
	Score for this opportunity	32
	Submission status	No errors (user submit)
Statistics	Number of submissions	16
	Total score possible	40
	Mean	27.52
	Median	30.85
	Mode	33, 38
	Range	0-39
	Quartile 1	23.08
	Quartile 3	35.05
	Standard deviation	10.82
	Question correctness (per question)	5 responses, 60% answered correctly
Total scores	Name	SURNAME, NAME
	UserID	12345678
	Submit date	Sep 5, 2020, 9:55 PM
	Time	30 min 43 sec
	Score	32
	Adjustment	0.0
	Final score	32
	Comments for students	Submission has been recorded

Additionally, a test log for each opportunity was also available with each student's test, the correct answers, and the answers submitted by the student. The relevant information was downloaded from the LMS and imported to Excel spreadsheets. The first step towards using the data involved cleaning. Student names and surnames are considered private and were removed from the file, and student numbers were replaced with numerical numbers so that no

personally identifiable information remained. These numbers were assigned upon completion of the first assessment and stayed the same throughout the semester for each student.

3.2.   Analysis and calculation of suspected dishonesty

For performing RTA, the cleaned event log for each test was sorted according to a) start date and time, and b) end date and time. The duration, in minutes, for each submission was calculated. The format of the cleaned and sorted event log for the second test is shown in Figure 1.

StudentID	StartMonth	StartDay	StartTime		EndMonth	EndDay	EndTime		Duration
014	Sep	17	10:36	AM	Sep	17	11:57	AM	81
009	Sep	18	01:14	PM	Sep	18	01:55	PM	42
004	Sep	18	01:16	PM	Sep	18	02:35	PM	79
007	Sep	18	02:01	PM	Sep	18	02:30	PM	30
001	Sep	18	02:55	PM	Sep	18	03:23	PM	28
028	Sep	18	09:29	AM	Sep	18	10:14	AM	46
057	Sep	18	09:38	AM	Sep	18	10:36	AM	58

Figure 1: Cleaned event log for test 2

The benchmark of 15 minutes was used for each of the analyses. In the excerpt, student 004 started within 15 minutes of student 009, and student 057 within 15 minutes of student 028. For every such case, the difference in ending times was also calculated. Students that started and ended within 15 minutes of each other, were flagged and used for further analysis. In the example, students 004 and 009 did not end within 15 minutes of one another and were consequently not flagged. However, students 028 and 057 started and ended within this limit and were selected for further investigation.

The next step in this analysis involved determining whether specific groups of students who had been identified in RTA, seemed to consistently work together when completing assessments. LCA was used to classify students according to frequent collaborative response patterns. These groups were further investigated by analysing individual responses (IRT) to specific items. Similar questions generated with different input values were used as a control measure. As an example, consider the economic order quantity presented in Equation 1. Suppose the context of the questions for students 028 and 057 were identical but the input values differed as in Table 2.

Table 2: Different inputs and answers to identical questions

Student	Annual demand (D)	Ordering cost (C_o)	Holding cost (C_h)	Economic ordering quantity (Q^*)
028	1000	10	0.5	200
057	1200	8	0.55	186.84

If the students provided the same answer for a question despite different variable values, they were suspected of being dishonest. Dishonest behaviour can be quantified according to the three paradigms elasticity, traceability, and repetition (Gerlach & Teodorescu, 2022). Considering the statistical nature of the data, facts were not misreported (elasticity), individuals need not be identified as liars (traceability), and the same approach was used throughout the semester for all tests (repetition). Therefore, the algorithm could be formalised into a dynamically evolving student trust score which can be calculated as follows:

$$TS_i = \sum_{j=1}^{n}(t_{ij} + c_{ij}) \qquad (2)$$

with $i = 1, \dots, m$ where m is the number of students enrolled in the course, n is the number of assessments in the course, t_{ij} is the trust score for the ith student in the jth assessment, and c_{ij} is the collaboration score for the ith student in the jth assessment. To clarify, for a total of five tests for which students had four opportunities each, a total TS value of 20 would be possible, where lower scores mean higher levels of honesty.

The analysis approach was performed after the final deadline for the first test and continued after each consecutive test thereby building the trust scores of the students. For demonstrative purposes, the results after test 5 will be shown in the next section.

4.   Results

The use of dynamically generated individualised tests was expressly communicated to the students at the onset of the semester. Despite this, it was found that students still collaborated when completing the assessments.
The three analysis techniques described in the previous section were sequentially applied upon completion of each test. Information resulting from each step will be shown in this section to demonstrate the growing trust scores of the students throughout the semester. Table 3 gives some valuable information relating to the effectiveness of the individualised testing system employed to generate the assessments.

Table 3: Number of submissions and collaboration instances

Assessment	Number of submissions	Suspected instances of collaboration (RTA)
Test 1	239	77
Test 2	187	46
Test 3	175	68
Test 4	172	65
Test 5	145	26

Figure 2 shows the trust scores of the population after a) five tests have been completed (with all three analyses performed on the first four), and b) RTA performed on test 5. The order of the students is the same as the submission order for the first test, as this was when data cleaning was done. Although no particular pattern could be identified relating to the submission times of the first test, smaller variability in trust scores was observed closer to test deadlines.
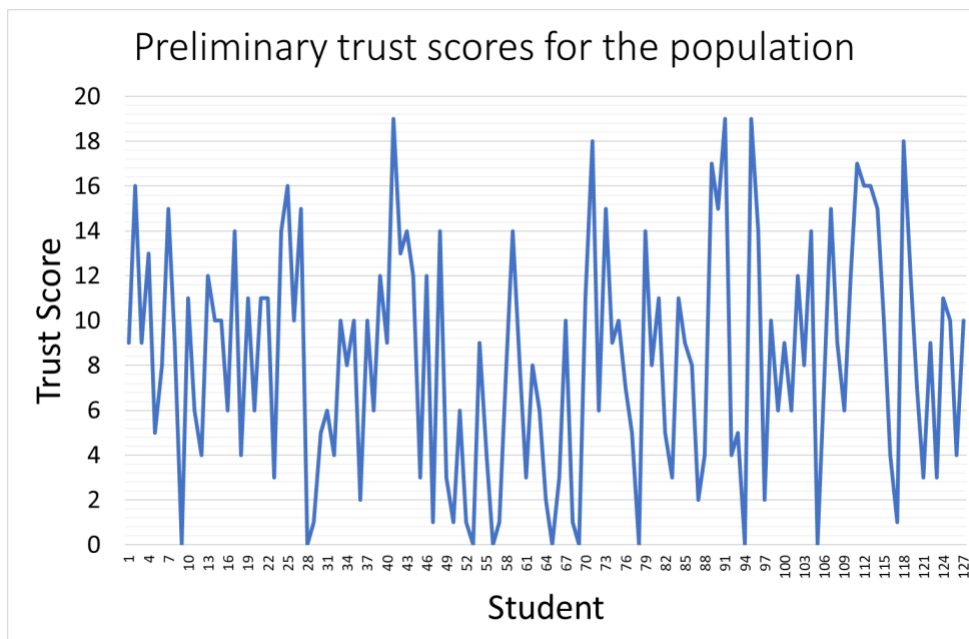
Figure 2: Trust scores after RTA for test 5

The bar chart in Figure 3 shows the subdivision of students with trust scores ranging from 10 or lower to 20. To tailor for coincidental patterns, it was decided that some leniency would be built into the model. For this reason, only

students with trust scores greater than 50% would be considered dishonest. About 37% of the population held trust scores of more than 50%.
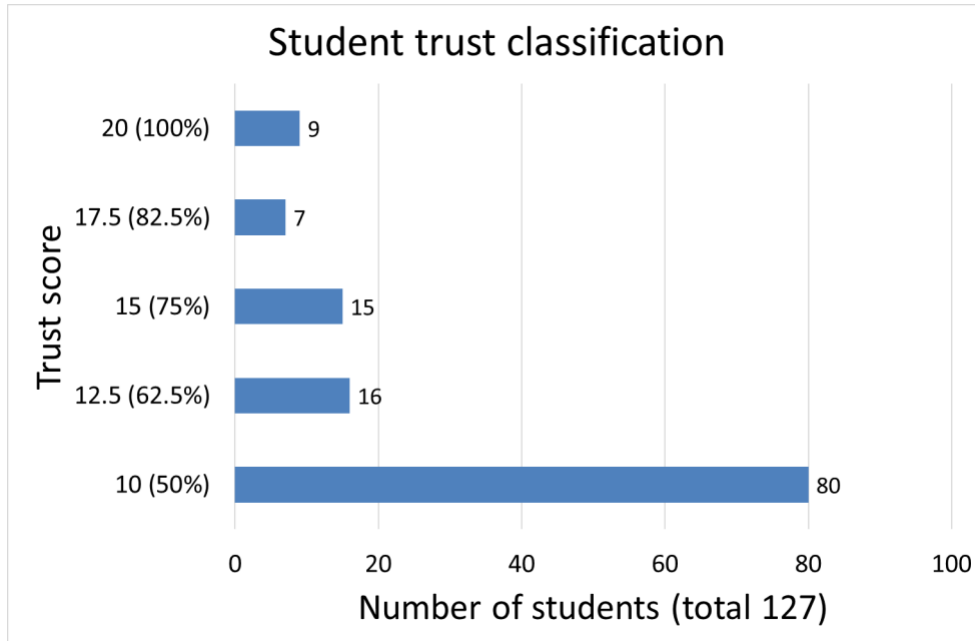
Figure 3: Student trust scores according to ranges

To better demonstrate the effect of LCA, the data was sorted according to overall trust scores. Recall that in LCA, students were grouped according to collaboration with the same peer. For each group, an average group trust score was calculated. Figure 4 presents the group trust scores together with the number of times the identified groups were found to have worked together.
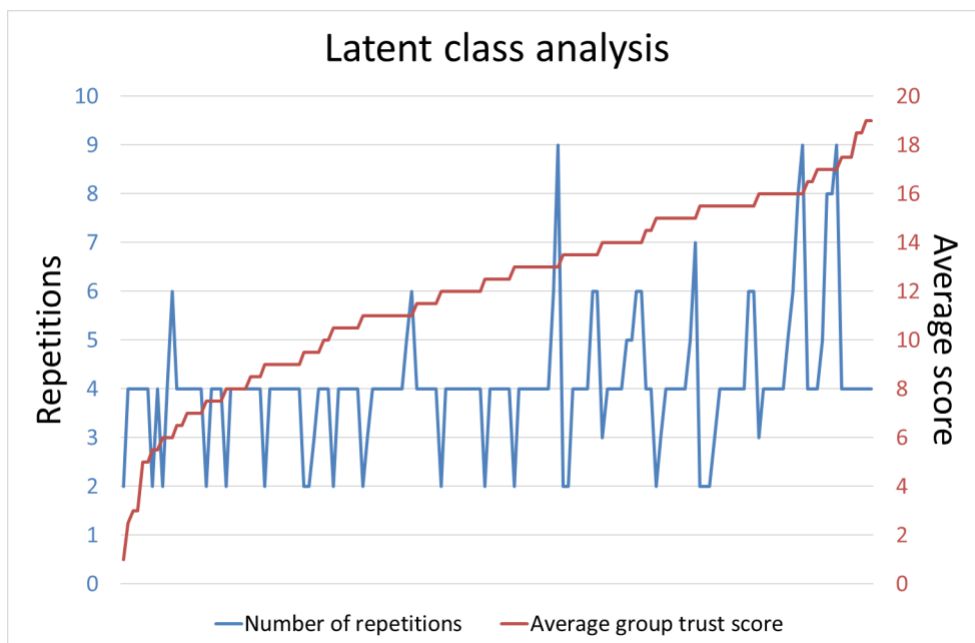
Figure 4: Average collaboration group trust scores and number of group collaborations

There were a total of 21 groups of student collaborators identified who worked together. The trust scores for the frequent collaborating group categories are shown in Figure 5.
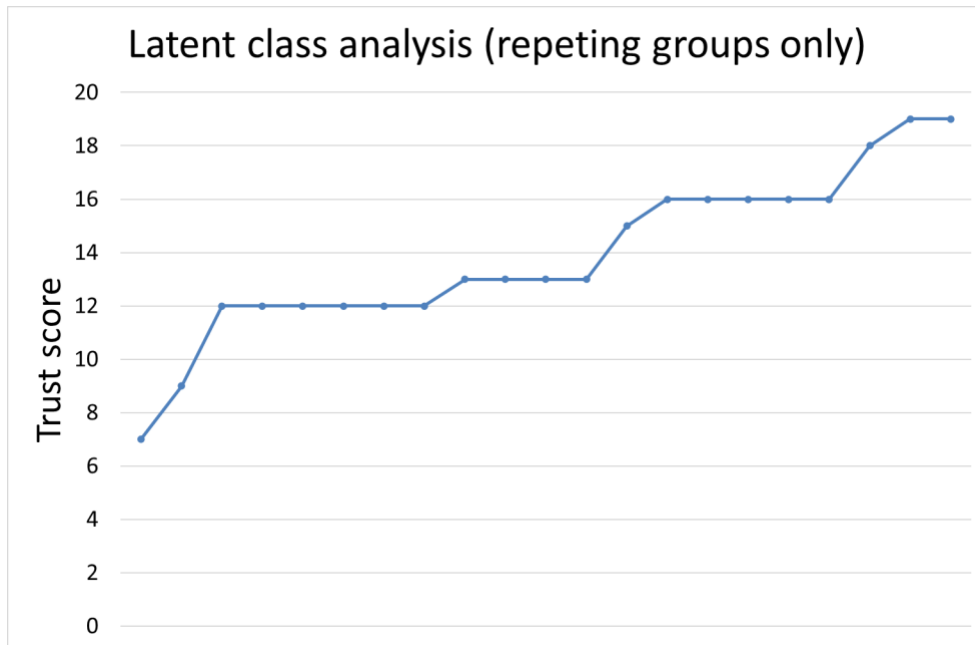
Figure 5: Trust scores of student collaboration groups

Finally, IRT was applied to the resulting data by adjusting the trust scores of students who supplied incorrect answers to control questions, that would have been the correct answer to the same question posed to an identified collaborator. The final adjusted trust scores for the entire population can be seen in Figure 6.
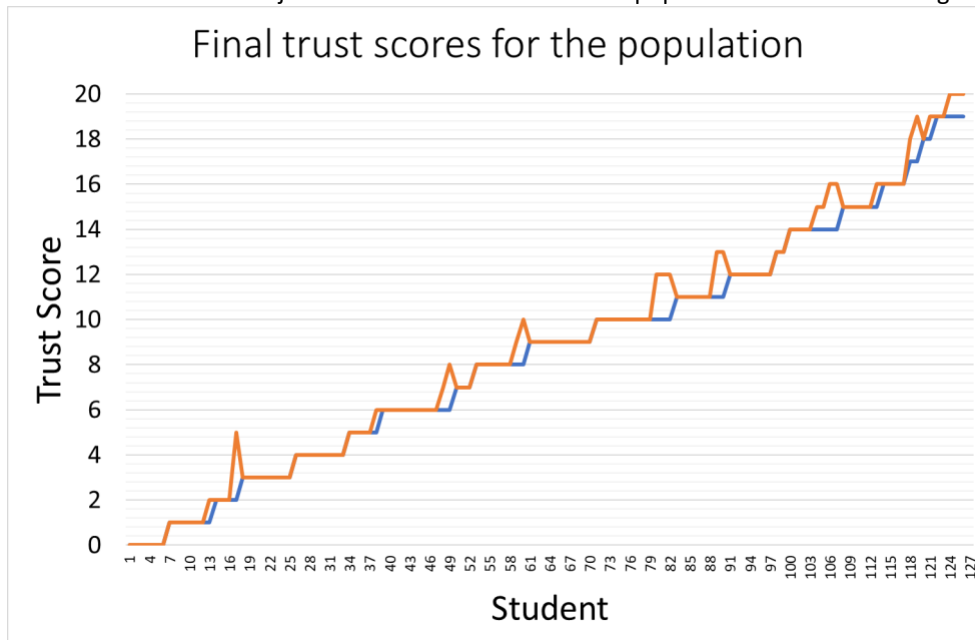
Figure 6: Final trust scores for the population

An interesting finding from this study was the improvement in the overall trust score as the semester progressed. Figure 7 shows the total trust scores generated for all five of the online assessments during the semester.
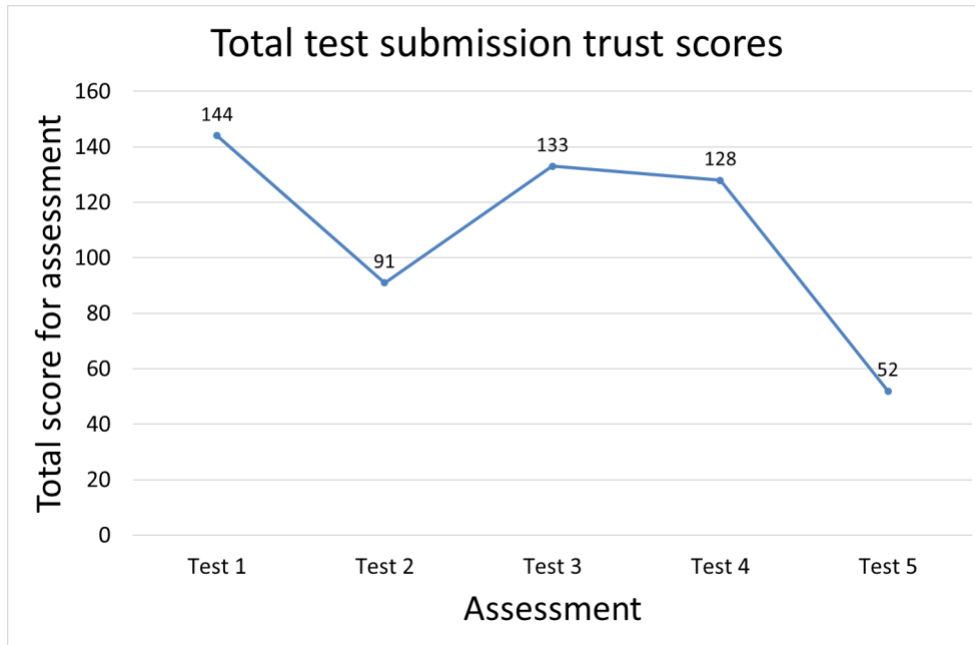
Figure 7: Total trust scores per assessment

It should be noted that students had been reminded of the dynamically generating test compilation system upon completion of test 1. This could account for the decrease observed in collaboration patterns in test 2. From the original population of 127 students, 17 had cancelled their studies throughout the semester. The relationship between final performance in the module and the resulting trust scores is indicated in Figure 8.
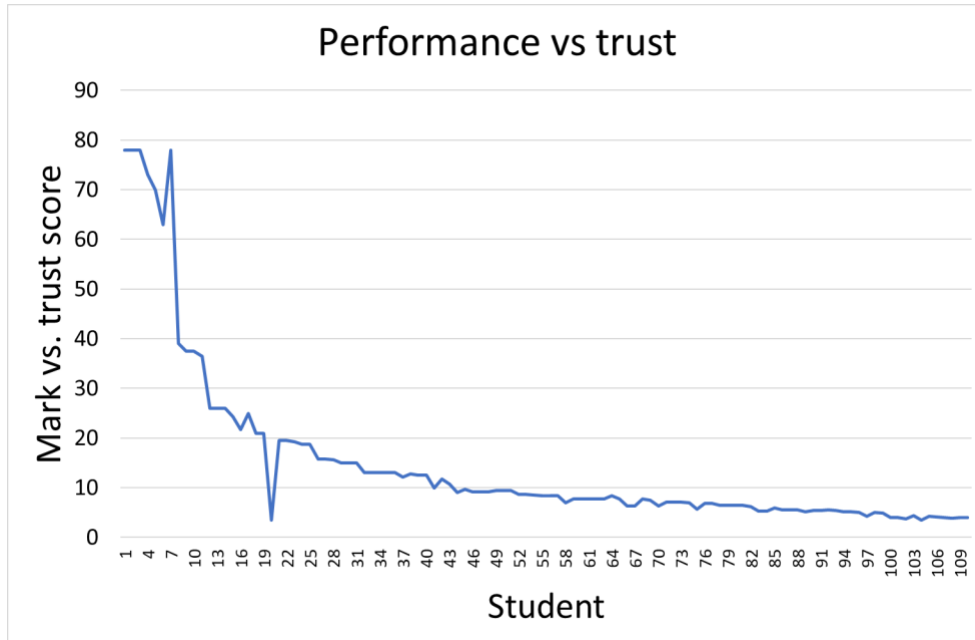
Figure 8: Relationship between student performance and trust score

It was very positive that without actually publishing the findings in this study, students seemed to realise that peer collaboration did not seem to improve their academic achievement.

5.   Conclusions

This study aimed to determine the effectiveness of a dynamically generating test compilation system by utilising the mathematical content of the DSS module to reduce student dishonesty in online assessments. Three analysis techniques namely response time analysis, latent class analysis, and item response theory were combined to categorise students according to their online submission patterns. This was done using a model to generate a student trust score for each participant which changed as the semester progressed.

The results show that patterns in dishonesty, relating to collaboration with peers, decreased as the semester progressed. Although a much greater margin was suspected, 63% of the students could be trusted to complete assessments with little to no help. The algorithm developed to generate the individualised tests was incorporated successfully into the LMS and the analysis techniques were proven to provide valuable insight into student collaboration patterns. Even though the standard teaching and learning modality has been restored at the NWU, the novel design of the online assessment system has been implemented in the years that followed with great success.

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Inteligencia Emocional Y Su Importancia En El Desarrollo Y Adaptabilidad Ante Un Contexto Cambiante: Un Estudio Bibliométrico

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RESUMEN

El presente artículo se desarrolla enmarcado en los planteamientos teóricos del método pospositivista, con ello se busca determinar el papel de la inteligencia emocional en el desarrollo integral de los seres humanos. Razón por la cual se realizó el análisis bibliográfico de 69 documentos, para esto se usó bases de datos Scopus, de donde se extrajeron y analizaron, para luego contrastar la información, la búsqueda estuvo regida bajo la variable inteligencia emocional, con esta máxima se filtraron y seleccionaron documentos que no se limitan a ningún orden cronológico o disciplinario. Dando como resultados que muchos de los autores tenían puntos en común, los cuales se resaltan en texto, no obstantes, se concluye que deben realizarse aproximaciones más ambiciosas pues el contexto social cambia de forma rápida.

Palabras clave: Educación; desarrollo emocional; inteligencia; habilidades; cambio

ABSTRACT

This article is developed within the framework of the theoretical approaches of the postpositivist method, with which it seeks to determine the role of emotional intelligence in the integral development of human beings. Reason for which the bibliographic analysis of 24 documents was carried out, including books, research articles, databases such as Google academic, Scielo and Redalyc were used, from which they were extracted and read one by one to later contrast the information, the search was governed Under the variables emotional intelligence and social development, with these maxims, documents that are not limited to any chronological or disciplinary order were filtered and selected. Giving as results that many of the authors had points in common, which are highlighted in the text, however, it is concluded that more ambitious approaches should be made since the social context changes rapidly.

Keywords: Education, emotional development, intelligence, skills, change

INTRODUCCIÓN

Los cambios sociales, culturales, demográficos, ambientales y económicos se dan de forma rápida, así como esporádica, lo cual deriva en hacer uso de los recursos mentales disponibles para poder mantenerse a la par de los requisitos. En este sentido, la salud ya no es un tema netamente físico, pues la parte interna, la siquis se configura como elemento determinante, mancando una pauta para el éxito el fracaso. Pues, el saber gestionar y movilizar recursos es preponderante en un contexto tan exigente y competitivo, jamás se había hecho tan imperativo el conocer la organización del propio ser.

La inteligencia emocional es definida por primera vez por los psicólogos, Peter Salovey y John Mayer, (1990), casi medio siglo atrás, y la describían como una habilidad del individuo para realizar abstracción, autorregularse, asimilar y comprender su propio ser. No obstante, se atribuye el concepto desde su perspectiva epistemología en la actualidad a Daniel Goleman, con su reconocida obra "inteligencia emocional publicada en 1995" la cual ha tenido variantes que se aplican en el canon educativo, laboral, empresarial y publicitario. Los tintes subyacentes en el éxito literario de Goleman se sustentas sobre los postulados de Salovey y Mayer, es así como, Leal, A., & TUTORIAL, O. Y. A. (2011), data la disrupción de Goleman, así como, su punto de inflexión en la postura adoptada, pues hasta el momento la inteligencia emocional era concebida desde lo sentimientos, el ello, lo femenino y familiar.

En este sentido, Goleman, (1996), va más allá que sus antecesores, revolucionado todo lo concebido sobre la inteligencia emocional y la platea como la capacidad para reconocer e identificar tanto las emociones propias como ajenas, además de la necesidad de gestionarlas. Esta nueva óptica contrae el hiato existente entre los mitos de las emociones y la cognición, pues estos elementos hasta ese entonces eran vistos como nodos discrepantes en los cuales el uno no servía al otro y la emoción nublaba la razón, ahora se sabe que la cognición, tal como la plateaba Piaget, Inhelder y Vygotski, los dos primero debido a la construcción de conceptos fiscos, tangibles, el último en base a lo lingüístico, flaquea ante la necesidad del Yo y el super Yo.

Lo cual desde tiempos inmemoriales fue tocado por pensadores como, René Descartes, quien aseguraba fervientemente que el pensamiento antecede cualquier tipo de sentimiento, es decir la razón lo es todo, de ahí su célebre frase "pienso y luego existo". Fundamento que sería puesto en entredicho cuando, Damasio, (2016), saca a la

luz su libro el "Errol de Descartes" si bien defiende la pericia, además, de resaltar la visión del autor, arremete fuertemente contra la idea de una mente aislada de las emociones, un pensar superfluo que se limita a dejar de lado las conexiones o lasos con otro mundo, el del sentir. En este sentido, es imperativo determinar el papel de la inteligencia emocional en el desarrollo integral de los seres humanos.

Ahora bien, los autores entes mencionados, vislumbran al ser humano como una entidad con necesidades, por lo cual no puede prescindir de sus emociones, como de un objeto. Tanto la inteligencia emocional, como la racional saltaron hace tiempo la barda ideológica que las mantenía ligadas a centros educativos o al hogar, en contexto laboral su uso es innegable y las aplicaciones en el Marketing genera millones de dólares, para, Philip Kotler, (2004), este es un proceso por el cual los individuos mediante vienes de servicio suplen necesidades particulares. En este orden de ideas, Ricardo Alcázar, (2010), agrega a este concepto la importancia de las percepciones y el sistema de creencias, lo cual da lugar al Marketing personal, que trabaja con el sistema variopinto que conforma al individuo.

En este escenario, Serrano Mantilla, (2015), resalta en base a estudios realizados por, Goleman en 2004, cinco habilidades primordiales, que a su vez se agrupan en dos grandes vertientes, inteligencia intrapersonal (internas, de autoconoci-miento) Inteligencia interperso-nal (externas, de relación). Razón por la cual, los productos y bienes de consumo deben gran parte de su existo a la capacidad de las organizaciones de establecer estudios que se centren en las emociones y centros placer de las personas, en este contexto, un mundo donde la amígdala tome decisiones las compras puede germinar y crecer sin parar.

Es por este motivo que la gestión y auto control se tornan como competencias indispensables para el desarrollo holístico, si bien, como, Cejudo, López & Rubio, (2016); Fragoso, (2015); Cazalla & Molero, (2014) y Secanella, (2016), interpretan el éxito desde el punto de vista académico, resaltando los proyectos de vida, la ética, la práctica y destrezas como ejes fundamentales. No obstante, Arias, (2016), discrepa en parte con esta postura y asegura que la búsqueda del desarrollo personal debe salir un poco de los requisitos de una economía volátil y buscar una formación emocional para evitar que esta interfiera en la toma de decisiones, es en este punto donde se carece de la autorregulación y autocontrol donde la emoción nubla la razón. lo cual es respaldado por, Páez & Castaño, (2015), cuando asegura que apostar por una formación emocional es construir empatía, autoconocimiento, interrelación y comunicación.

MÉTODOS

El presente artículo deriva de un estudio bibliométrico realizado por los autores entorno a determinar el papel de la inteligencia emocional en el desarrollo integral de los seres humanos, lo cual se ajustó a los planteamientos de la secuencia teórica del paradigma pospositivista, método cualitativo enmarcado en el análisis bibliométrico de la información, en palabras de, Guirao-Goris, (2015), es idónea constatar el estado de desarrollo de la literatura existente sobre un tema en específico. La búsqueda original mediante Scopus arrojo 427 documentos, los cuales luego de ser sometidos a filtros que abarcan, la tipología, el enfoque, e idioma español a inglés, dejan como resultado 69 ejemplares.

La ecuación de búsqueda se conformó por TITLE-ABS-KEY (inteligencia AND emocional) AND (EXCLUDE (SUBJAREA , "AGRI") OR EXCLUDE (SUBJAREA , "PHAR") OR EXCLUDE (SUBJAREA , "COMP") OR EXCLUDE (SUBJAREA , "MEDI") OR EXCLUDE (SUBJAREA , "HEAL") OR EXCLUDE (SUBJAREA , "NURS") OR EXCLUDE (SUBJAREA , "SOCI") OR EXCLUDE (SUBJAREA , "BUSI") OR EXCLUDE (SUBJAREA , "ARTS") OR EXCLUDE (SUBJAREA , "DECI") OR EXCLUDE (SUBJAREA , "ECON") OR EXCLUDE (SUBJAREA , "NEUR")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (EXACTKEYWORD , "Emotional Intelligence")) AND (EXCLUDE (EXACTSRCTITLE , "Cuadernos De Psicologia Del Deporte") OR EXCLUDE (EXACTSRCTITLE , "Revista Iberoamericana De Psicologia Del Ejercicio Y El Deporte") OR EXCLUDE (EXACTSRCTITLE , "Revista De Psicologia Del Deporte")) AND (EXCLUDE (LANGUAGE , "Croatian") OR EXCLUDE (LANGUAGE , "Portuguese"). Los resultados obtenidos fueron producto del análisis de los manuscritos, así como, la contrastación de los elementos intrínsecos entre sí, lo cual permitió trazar los parámetros que se desglosan en los apartados siguientes.

RESULTADOS Y DISCUSIÓN

Los textos analizados permiten identificar aspectos primordiales en lo que respecta a la inteligencia emocional, estos son expresados en la figura uno, dando así, una visión más amplia de las habilidades que deben ser

exhortadas en el ser humano para poder incorporarse y ser un ente participativo, además de propositivo en una sociedad que cambia de forma constante ante las necesidades políticas, económicas, culturales e ideológicas.

Figura 1: nodos de convergencia entre autores.
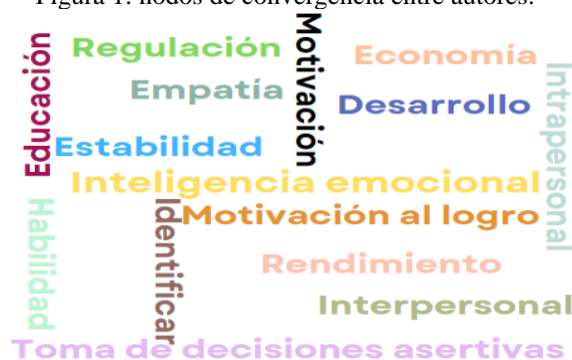
Fuente: elaboración propia.

Los textos intervenidos convergen en la importancia de la inteligencia emocional a lo largo de la vida, punto que concuerda con lo expuesto por, Arrivillaga & Extremera, (2020), quienes aseguran que, si bien, las decisiones importantes se toman durante la edad adulta, es en la etapa infantil y adolescente cuando se da un mayor solapamiento de las cavidades cerebrales. Esto es posible de conocer actualmente gracias a los avances de la neurociencia, Shapiro, & Tiscornia, (1997), manifiestan que los niños se ven directamente beneficiados de una nueva revolución en la psicología infantil impulsada por la ciencia y la tecnología. Lo que reafirma que las emociones no son un concepto metafísico aislado de la realidad con ningún tipo de injerencia en la vida de las personas.

Tabla 1: autores con mayor número de publicaciones.

Autores	Título	# de citas.
		105
Pacheco, Rey, Sánchez-álvarez.	Validation of the spanish version of the wong law emotional intelligence scale (WLEIS-S).	
		44
Beltrán-Catalán, Zych, Ortega-Ruiz, Llorent.	Victimisation through bullying and cyberbullying: Emotional intelligence, severity of victimisation and technology use in different types of victims.	
		33
Gascó, Badenes, Plumed.	Trait emotional intelligence and subjective well-being in adolescents: The moderating role of feelings.	
		27
Puertas-Molero, Zurita-Ortega, Chacón-Cuberos, Ramírez-	Emotional intelligence in the field of education: A meta-analysis.	

Granizo, González-Valero.		Fuente:
Mérida-López, Sánchez-Gómez, Extremera.	Abandono de la profesión docente: examen del papel del apoyo social, el compromiso y la inteligencia emocional en las intenciones de abandono de los docentes.	24
Fernández-Lasarte, Axpe Sáez.	Academic performance, perceived social support and emotional intelligence at the university.	23
Extremera	Coping with the stress caused by the COVID-19 pandemic: future research agenda based on emotional intelligence.	19
Méndez-Giménez, Cecchini, García-Romero.	Profiles of emotional intelligence and their relationship with motivational and well-being factors in physical education.	16
Delhom, Satorres, Meléndez.	Can We Improve Emotional Skills in Older Adults? Emotional Intelligence, Life Satisfaction, and Resilience.	12
Valente, Lourenço, Alves, Dominguez-Lara.	The role of the teacher's emotional intelligence for efficacy and classroom management.	12

elaboración propia.

La tabla número uno presenta a los autores con el mayor número de publicaciones luego de realizar el análisis a los datos, se percibe que es una temática de gran importancia, además que ha tomado fuerza durante la ultima década, a esto se le añade que los trabajos citados son concebidos como clásicos o líneas a seguir al momento de realizar el abordaje de esta área.

Gráfica 1: número de publicaciones por año.
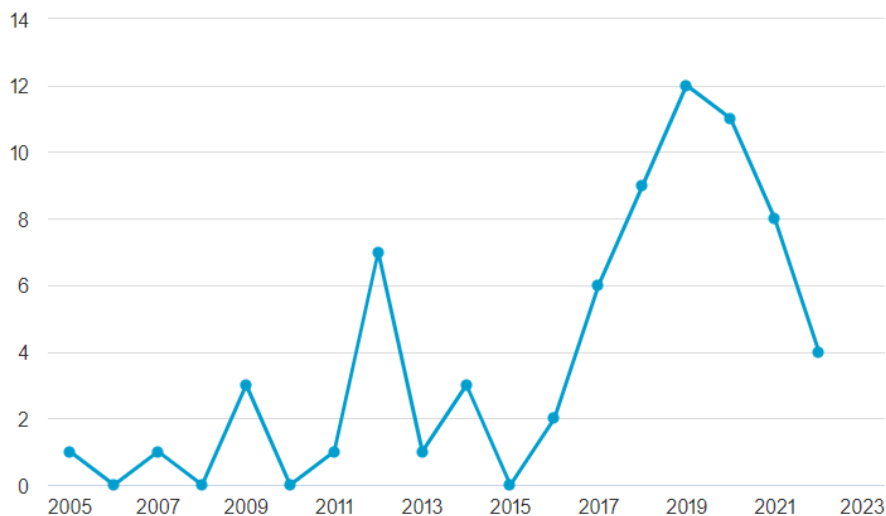
Fuente: elaboración propia.

Los datos inherentes a la primera gráfica son bastante dicientes, puesto que exponen a detalle la curva de desarrollo positivo y negativo de la producción científica y académica en materia de publicaciones y divulgación en el campo de la inteligencia emocional, en este orden de ideas, es conveniente precisar que desde 2005, cuando se da la primera publicación hasta 2023 corte actual han existido altos y bajos, sin embargo, se aprecia una mayor producción a partir de 2018 el cual alcanza su climas a finales del 2019 e inicios de 2020, 2021 y 2022, estas fechas concuerdan con la aparición de la COVID19 y todo lo que esto trajo consigo, como lo es el aislamiento y cuadros de depresión, lo que hicieron que dio origen a muchas investigaciones que se volcaron al campo emocional, pues, esto se sustenta, sobre los datos de 2023 los cuales no superan la media de 2018.

Gráfica 2: países con mayor número de publicaciones.
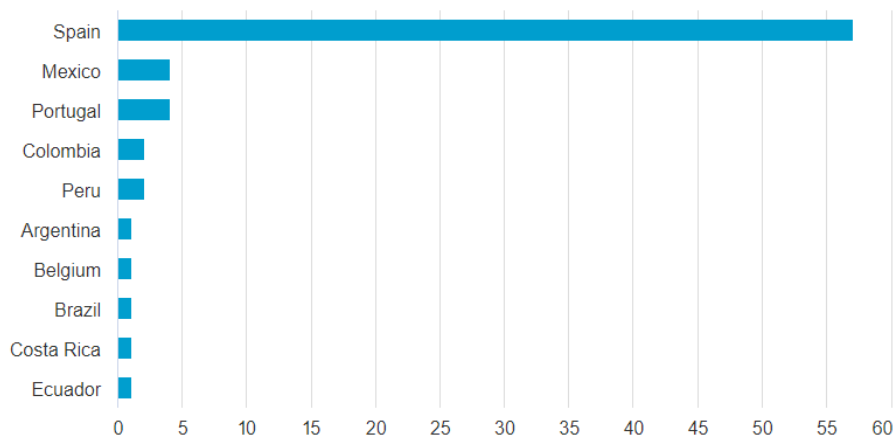
Fuente: elaboración propia.

La inteligencia emocional es una temática de corte internacional, por lo cual es más que razonable encontrar una diseminación de la producción científica y académica por distintas localidades del globo, sin embargo, la gráfica uno devela un panorama desalentador para el continente americano, pues, España por si solo eclisa a países que históricamente son galantes en investigación, como México y Brasil, el sondeo realizado muestra que en España se han realizado más del 82% de los aportes en este campo, una brecha abismal que demuestra que los interés de los demás países se encuentran enfocados a campos o disciplinas que si bien son importantes, resultan ser un indicativo del abandono y descuido de la salud mental en occidente.

Figura 2: análisis de concurrencia.
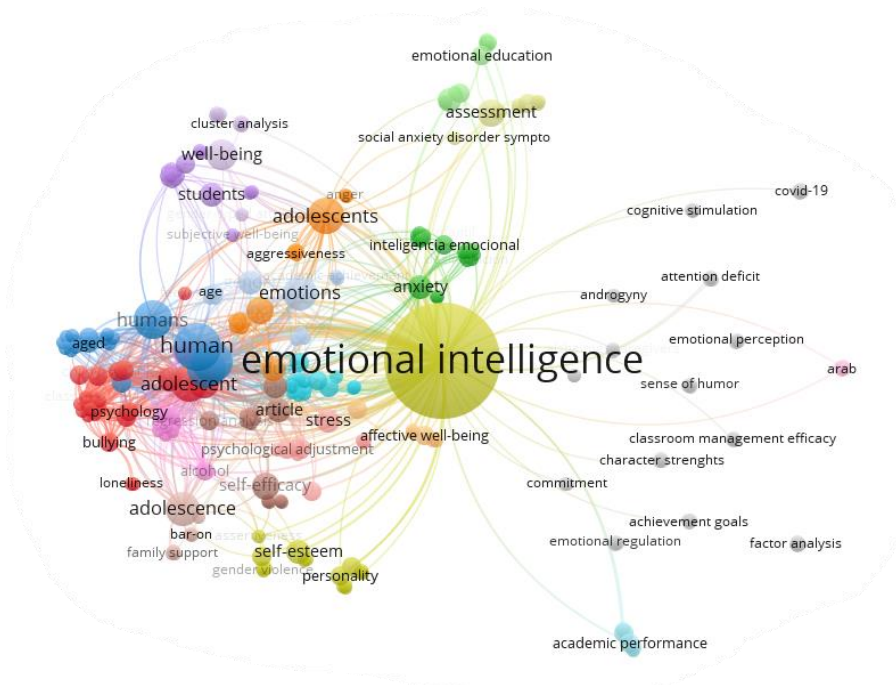
Fuente: elaboración propia.

Inteligencia emocional es un concepto crese y desarrolla en base a multiplicidad de preceptos, los cuales son apreciables en la figura dos y se correlacional con los elementos expuestos en la figura uno, no obstante, al realizase un desglose partiendo de las palabras claves, salta a la vista que los autores convengan en la necesidad de incentivar la identificación de las emociones, su importancia y relación con la cognición, así como, con el logro de los objetivos personales a corto, mediano y largo plazo, plasmándolas como pilar para la realización de actividades laborales, académicas y familiares, resaltando su importancia para la construcción de una identidad estable y encausada a veneficios no solo particulares.

CONCLUSIONES

La profundidad en la producción científica y académica sobre la inteligencia emocional se configura como eje fundamental para el desarrollo social de las personas a nivel general, pues, al ser seres que han evolucionado para vivir en grupos, es importante no solo el conocimiento técnico, también es necesario conocer a los demás y contar con la capacidad para conocerse a si mismo. En este sentido, se hace necesario la deconstrucción del concepto de inteligencia emocional y el paradigma que se desarrolla a su alrededor, Mayer y Salovey, sirven de guía para Bisquerra, (2012), cuando resaltar como elementos en el crecimiento emocional la necesidad de, percepción emocional, facilitación emocional del pensamiento, comprensión y regulación emocionales. Los cuales deben incentivarse, así como, la historia y las matemáticas en la educación para pasar de una inteligencia emocional a la educación emocional.

Aunque el conceto de inteligencia emocional lleva un tiempo considerable haciendo parte de diversos debates en la esfera investigativa, aun se conoce muy poco de ello, los centros a los cuales se liga, las funciones de órganos distintos al cerebro en la manifestación de complicaciones de salud derivado de estados de depresión o enfermedades psicosomáticas derivadas de estados emocionales complejos negativos o positivos.

La tecnología, la inteligencia artificial, la economía y política, así como la fragilidad de la sociedad conforman un caldo de cultivo excelente para que una población con problemas emocionales serios producto de una educación emocional poca o nula tomen decisiones importantes enmarcados en impulsos provenientes de reacciones internas, es en este punto donde debe crearse el debate, quien controla a quien, las emociones al ser humano o el ser humano las emociones.

Razón por la cual, es importante resaltar que la inteligencia emocional tiene un rol protagónico en el logro de los objetivos personales, pues, su desarrollo ameno permite establecer relaciones, crear vínculos afectivos sanos entre los elementos de una organización o grupo social, a esto Feldman, (2006), suma que forma el carácter, el compromiso y responsabilidad, forjando uniones enmarcadas en la empatía, conciencia personal y habilidades sociales. Esto resulta ser atractivo para las empresas, instituciones o equipos de alto rendimiento, pues una sana salud mental se refleja en objetividad y organización, así como, en la obtención de las metas establecidas, la visón de, Ríos (2008), sobre el poder de la autogestión y regulación interna de recursos se complementa con, Padrón López & Sánchez de Gallardo, (2010), quienes trazan una línea entre factores como, la motivación, rendimiento profesional, toma de decisiones, resiliencia, adaptabilidad como elementos propios de una buena educación emocional.

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Exploring vocational commitment from a learning perspective: Moderation of emotional regulation

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Abstract.

Vocational commitment has emerged as a key topic in vocational learning and education. Drawing on social learning theory (SLT), this study establishes a research model that explains the vocational commitment of nursing interns. In the model, two predictors including learning goal orientation and learning self-efficacy influence vocational commitment directly and indirectly via the mediation of perceived helplessness. At the same time, the relationships between vocational commitment and its determinants are proposed to be moderated by emotional regulation. Statistical analyses are executed using the data from nursing interns in Taiwan. Based on its empirical findings, this study discusses important theoretical and practical implications.

Keywords: Learning self-efficacy, learning goal orientation, vocational commitment.

Introduction

Since the shortage of nurses in society has long caused social instability (e.g., during the outbreak of Covid-19), understanding the formation process of vocational commitment among nursing interns has become critical for society to improve the shortage by motivating prospective interns to continue staying in and working for healthcare organizations as their long-term career choice. Defined as individuals' attitudinal strength of identification with and engagement in their profession (Lin et al., 2022), vocational commitment affects their career choice on whether to continue participating in the profession. It has been found that high vocational commitment can improve retention, professional competence, job satisfaction, and job performance (Zhao et al., 2022). Previous studies have demonstrated that nursing interns with strong vocational commitment are likely to maintain such strong vocational commitment when they become registered nurses after graduation from higher education institutions (Cheng et al., 2021; Coomber & Barriball, 2007; Lu et al., 2000).

Although vocational commitment has been widely discussed in the literature that concentrated on personality (Jin et al., 2009), professional expectations(Akgunduz & Eser, 2022), or need fulfillment (e.g., competence and relatedness) (Kunnen, 2022) as major predictors, little has been tried to explore the formation process of vocational commitment from a learning perspective, suggesting the first research gap to be filled by this study. Learning-related factors are significant for vocational commitment because professional learning can influence individuals' psychological awareness of being able to control future career development and advancement that consequently drives vocational commitment. Being equally important to the first research gap, the second research gap of this study relates to whether there exists important factors that can substantially intervene the formation process of vocational commitment. All in tall, this study tries to fill the gaps by answering two research questions, including (1) what are key learning-related determinants that influence vocational commitment, and through what mediating mechanism? (2) What are key moderators that influence the relationships between vocational commitment and its determinants?

To answer the first research question, this study draws upon social learning theory (SLT) to propose a research model wherein vocational commitment is influenced by learning self-efficacy and learning goal orientation directly and indirectly via the partial mediation of perceived helplessness. Note that learning self-efficacy and learning goal orientation are two pillars of learning that represent key personal cognitive evaluations reflected in learning environment according to social learning theory (Bandura, 1968; Bandura & Walters, 1977). While learning self-efficacy provides the confidence to cope with learning barriers (Wu et al., 2007), learning goal orientation provides learning directions and opportunities for goal attainment (Spinath & Steinmayr, 2012). Perceived helplessness based on theory of learned helplessness is considered a key mediator because it represents the negative feeling or stress confronted by individuals due to their perceived uncontrollability (i.e., perceived helplessness), which is likely to discourage individuals from continuously committing themselves to the profession they chose (i.e., reduced vocational commitment).

To answer the second research question, this study proposes emotional regulation (i.e., an affective factor of SLT) as a moderator in the development of vocational commitment owing to following reasons. Individuals high in emotional regulation are likely to make efforts to adjust or control emotions and divert occupational attention towards a positive light (Ahmad & Oriani, 2022), consequently affecting the formation process of vocational commitment. Although research has widely studied the influence of emotional regulation on nurses' clinical performance (Gou et al., 2021; Wang et al., 2018), little attention has been paid to the moderating role of emotional regulation in the development of nursing interns' vocational commitment.

The major contributions of this research are two-fold. First, this research complements previous studies by integrating SLT with theory of learned helplessness to justify the mediating role of perceived helplessness from a learning perspective, thus contributing to vocational literature. Second, this study contributes to understanding how affective and social factors (such as emotional regulation) come into play as critical moderating roles for vocational commitment development. Collectively, understanding both mediating and moderating mechanisms in this study will enable scholars and practitioners to better understand complicated interactions that can be leveraged to effectively increase interns' vocational commitment.

Research Model and Propositions

A research model of vocational commitment is proposed by this study. First, learning goal orientation and learning self-efficacy both have direct effects on vocational commitment. Second, these two predictors also have indirect effects on vocational commitment via the mediation of perceived helplessness. Third, emotional regulation moderates the relationships between vocational commitment and its three determinants (i.e., learning goal orientation, learning self-efficacy, and perceived helplessness). The theoretical justifications for the model and its propositions are discussed in the followings.

A key personal cognitive factor that influences vocational commitment is learning goal orientation, which refers to the extent to develop oneself by acquiring new skills, mastering new situations, and improving one's competence (Godshalk & Sosik, 2003).

According to social learning theory (Bandura, 1986), nursing interns respond to their focal internship environment by setting their learning goal (Huang & Luthans, 2015). In other words, learning goal orientation enables nursing interns to stimulate vocational expectations and consequently influence their subsequent involvement in and identification with their occupation (i.e., vocational commitment). Previous studies have shown that learning goal orientation is positively correlated with intrinsic motivation, job performance and vocational commitment (Elliot & Church, 1997; Joo & Park, 2010; Porath & Bateman, 2006). Individuals with strong learning goal orientation tend to focus more on the profession itself and pursue complex occupational tasks even without extrinsic rewards, thus intensifying their psychological link to the vocation (i.e., increased vocational commitment). In other words, they are more likely to feel a sense of attachment (i.e., commitment) towards their prospective occupation and career, suggesting a direct and positive relationship between learning goal orientation and vocational commitment.

In addition to its direct effect on vocational commitment, learning goal orientation is likely to have an indirect effect on vocational commitment through perceived helplessness. Defined as a feeling of being unable to control important matters in one's job career, perceived helplessness has been found to affect occupational commitment (Chen et al., 2021). Dysfunctional career outcomes (e.g., low vocational commitment) were associated with increased perceived helplessness (Darsana et al., 2019). Individuals who possess a high level of perceived helplessness is unlikely to have desire or intention to stay in the same oc cupation, suggesting the negative association between perceived helplessness and vocational commitment. At the same time, perceived helplessness arises when individuals fail to develop their competence via difficult learning tasks (Saraswati et al., 2020), suggesting the negative association between learning goal orientation and perceived helplessness (Kiran et al., 2019). All in all, the first proposition is thus proposed below.

P1: Learning goal orientation is positively related to the vocational commitment directly and indirectly via the partial mediation of perceived helplessness.

According to SLT, learning self-efficacy is the most critical factor that directly drives professional development and behavioral outcomes (Gushue et al., 2006). Learning self-efficacy refers to a confident faith that enables individuals to actively participate in learning activities and exhibit greater persistence when encountering difficulties, consequently reducing anxiety and perceived helplessness (Chiu, 2014; Schunk & Ertmer, 2000). Previous research (DEMIRBILEK & ATILA, 2021) has suggested that learning self-efficacy negatively influences perceived helplessness. Perceived helplessness increases when individuals lack self-confidence in effectively performing learning activities (Wu & Tu, 2019). Afterwards, perceived helplessness that engenders unpleasant experiences about the profession are likely to deter interns from choosing a nursing career and committing to it (Sandler, 2000). Collectively, learning self-efficacy negatively influences perceived helplessness that weakens vocational commitment. The second proposition is thus derived below.

P2: Learning self-efficacy is positively related to the vocational commitment directly and indirectly via the partial mediation of perceived helplessness.

Despite the important role of emotional regulation in the workplaces (Meyer & Herscovitch, 2001), its moderating influence in the development of vocational commitment has not been discovered yet. Emotional regulation has been considered an important means to facilitate performance and commitment (ALIZADEH et al., 2014; Gou et al., 2021; Hwang & Park, 2022; Landa et al., 2009). Emotional regulation can increase individuals' motivation and willingness to take responsibility in their emotional reactions, calmly plan for their career, and serenely observe their learning environments for opportunities. Accordingly, emotional regulation helps individuals conserve mental resources to handle vocational challenges (Brown et al., 2003), thus leading to their less dependence on learning goal orientation to bolster vocational commitment. On the contrary, with poorer emotional regulation ability (with less emotional resources to deal with vocational challenges), learning goal orientation becomes more critical for boosting vocational commitment than it would otherwise. Thus, the third proposition is stated below.

P3: Emotional regulation moderates the relationship between learning goal orientation and vocational commitment such that the relationship is weaker when emotional regulation is stronger.

Emotional regulation strongly influences the association between learning self-efficacy and career motivation (Wang & Yan, 2018). Strong emotional regulation is helpful for psychological health, social functioning, and effective coping strategies to act of their own volition in stressful situations (Cole et al., 2004; Crossley & Stanton, 2005; Tamir et al., 2015). Individuals with strong emotional regulation are able to manage their emotions in stressful and uncertain situations (Ilgar & Karakurt, 2018), thus leading to their less reliance on learning self-efficacy to develop vocational commitment. On the contrary, individuals with weak emotional regulation often fail to demonstrate adaptive response to provocative stimuli, thus rendering learning self-efficacy more critical for driving vocational commitment. Thus, the fourth proposition is described below.

P4: Emotional regulation moderates the relationship between learning self-efficacy and vocational commitment such that the relationship is weaker when emotional regulation is stronger.

Extending previous research that has shown a strong correlation between emotional regulation and perceived helplessness (Katana et al., 2019; Wang & Saudino, 2011), this study attempts to further explore how emotional regulation interacts with perceived helplessness to jointly influence vocational commitment. As a critical regulatory capacity that buffers against the negative influence of perceived stressful uncontrollability (Fathi & Derakhshan, 2019), emotional regulation is likely to alleviate the influence of perceived helpfulness on vocational commitment. In other words, strong emotional regulation helps maintain psychological health and deal with stressful situations (Ghosh & Halder, 2020), thus supporting individuals' sustainable engagement and involvement in their profession (Lee et al., 2013) by mitigating the impact of perceived stress and anxiety (e.g., helplessness) on vocational commitment (Por et al., 2011). On the contrary, individuals with weak emotional regulation react to negative incidents sensitively (Naeem et al., 2020) and they are sensitively discouraged by perceived helplessness from committing to their vocation. All in all, weak emotional regulation is likely to amplify the negative impact of perceived helplessness on vocational commitment. A proposition is thus derived below.

P5: Emotional regulation negatively moderates the relationship between perceived helplessness and vocational commitment such that the relationship is weaker when emotional regulation is stronger.

Discussion

This study demonstrated how the SLT framework is useful for analyzing the vocational commitment of nursing interns by simultaneously accounting for the interactions between perceived helplessness as a mediator and emotional regulation as a moderator. This study complements previous research by exploring novel but understudied variables in terms of SLT (e.g., perceived helplessness). Collectively, understanding the mediating and moderating mechanisms investigated in this study allows nursing researchers and practitioners to appropriately leverage resources and

strategies to increase the vocational commitment of nursing interns. The research and managerial implications of this study are discussed in the following.

Research implications

This research makes three theoretical contributions to enrich prior research literature. First, this study applied SLT to depict how learning-related predictors influence vocational commitment, complementing traditional motivational theories (e.g., Hezberg's hygiene theory) that examines job satisfaction and stress as the predictors of vocational commitment (Bakker & Demerouti, 2007; Bakker et al., 2023; Fishbein & Ajzen, 1977). Additionally, whereas social cognitive career theory focuses on the extrinsic benefits of learning (e.g., learning relative advantage) (Lent et al., 1994), this study emphasized personal tendencies such as learning goal orientation and learning self-efficacy as critical predictors driving vocational commitment.

Second, the moderating role of emotional regulation in this study complements the attraction–selection–attrition (A-S-A) theory arguing that emotional intelligence (as a predictor) influences whether people are likely to have vocational commitment towards a specific industry (Kusluvan et al., 2010). For example, previous research based on the A-S-A theory has found that people will stick to job career opportunities in an industry (e.g., vocational commitment) when they emotionally connect with the industry that has values or beliefs similar to their own (Walsh et al., 2015). Neverttheless, the moderating role of emotional regulation has not been considered in the A-S-A theory. All in all, the finding of this study regarding the moderation of emotional regulation may be integrated into the A-S-A theory to explain vocational commitment to a deeper extent.

Practical implications

The direct and negative effect of learning goal orientation on perceived helplessness suggests that nursing interns should focus on the importance of proactive learning and the value of mastering challenging tasks in order to alleviate perceived helplessness. For example, interns are enlightened by inspiring stories that relate to learning challenges, strategies, and successful learning outcomes, consequently psyching themselves up. At the same time, the finding about learning self-efficacy that can reduce perceived helplessness and boost vocational commitment suggests that nursing interns should be guided to set and achieve learning goals in order to alleviate perceived helplessness and enlarge vocational commitment. Specifically, interns who are able to see how far they have come towards their goals are likely to develop their self-confidence about learning. Workplace recognition provided to represent the acknowledgment of effortful interns can help them reinforce their self-confidence.

The negative moderating effect of emotional regulation on the relationship between learning goal orientation and vocational commitment and between learning self-efficacy and vocational commitment suggests the need for individualized training instructions necessary to guide interns with different levels of emotional regulation. Specifically, interns with lower emotional regulation should be paid with more attention to strengthen learning goal orientation and learning self-efficacy to which they are more sensitive.

Limitations and future research

This study has limitations that restrict the application and generalizability of its findings. First, this study collected data from interns in nursing colleges, and the results may not be applicable to interns from different academic disciplines. Second, by focusing on the SLT, this study did not take into account political and market-related factors, which may influence an intern's affective tone or perceived risk of commitment. Third, some relevant variables that may be relevant to vocational commitment were not taken into account in this study (e.g., personal innovativeness, vocation risk preference). Future research can try investigating interns from a wide variety of disciplines and include more control variables for obtaining more accurate empirical results.

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Obstacles To The Use Of Emotional Goals In Teaching Arabic Language At The Intermediate

Stage As Perceived By Arabic Language Teachers At The Ministry Of Education In The State Of Kuwait

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Abstract

This study aimed to uncover the challenges faced by Arabic language educators in Kuwait when integrating emotional goals in their teaching practices at the intermediate level. Employing a descriptive approach, the researcher developed a questionnaire encompassed three key areas: formulating emotional goals, applying them, and measuring their effectiveness. The study involved 260 randomly selected male and female teachers. The primary research question focused on the hindrances impeding the use of emotional goals in intermediate Arabic language instruction in Kuwait.

The study postulated a hypothesis that assumed no statistically significant differences at the 0.05 significance level in the mean scores of male and female Arabic language teachers regarding their personal characteristics, including gender, educational qualifications, region, years of teaching experience, and participation in emotional goal-focused training courses during their careers.

Findings indicated that obstacles related to the "emotive" dimension received a lower mean score of 2.39. Obstacles related to the application of emotional goals scored 3.02, while those tied to the formulation of emotional goals scored 3.32. Importantly, the study revealed no statistically significant disparities among the sample members concerning obstacles to implementing emotional goals, considering the study variables.

Keywords: emotional goals; Learning objectives; Arabic Language education.

Introduction

Behavioral objectives are the cornerstone of any curriculum aimed at excellence and comprehensiveness. They serve as the foundational step for crafting precise and detailed educational programs. Clarity in objectives represents the linchpin for directing purposeful educational activities, and, based on them, the components of an effective curriculum are determined. Among these behavioral objectives, the affective domain objectives are among the most vital. They are the sought-after goals through which teachers aim to instill values in learners and prepare them to become responsible citizens. According to Rajab (2011), effective education is not merely about imparting information and knowledge to learners but also involves equipping them with critical thinking skills, practical skills, and values that enable self-regulation and self-directed learning.

An individual's personal characteristics and development are closely linked to the integrity of their affective dimension, which forms an integral part of their identity. How a learner responds to stimuli and interacts with them, whether negatively or positively, is closely tied to the satisfaction of their emotional needs. These needs, in turn, influence their behavior toward themselves and others. Emotional education goes hand in hand with formal education, forming two sides of the same coin. Together, they constitute the building blocks of a learner's personality, imparting motivation and a desire for learning (Badawi & Mohammed, 2019).

In this context, Thorndike, a pioneer in educational psychology and the psychology of learning, posited that every individual possesses psychological and behavioral readiness upon which their behavior is based. Accordingly, their behavior will be persuasive and suitable if they possess the potential for certain behaviors or learning, whereas their behavior towards learning or behavior acquisition will be negative if their potential is weak. Forcing them to acquire knowledge or engage in a particular behavior is cumbersome and harmful (Al-Zaghloul, 2010).

The responsibility of teaching Arabic language and its educators carries the greater burden of instilling love and appreciation for all that is beautiful in the hearts of the youth. It involves nurturing their sense of taste, discrimination, and the ability to make good choices, especially in a world where they encounter numerous situations and circumstances that may not align with their beliefs, attitudes, and inclinations (Mousa, 2018).

The absence of emotional goals in teaching Arabic language negatively impacts the learners, who represent the future of society. With their hands, nations are built and economies, politics, and social structures flourish. The neglect of emotional goals is associated with the lack of motivation for learning and achievement. Constructing a person's knowledge alone, negatively influences their values and attitudes. Humans are not just intellectual beings; they are also emotional and spiritual. To nurture emotional, psychological, and spiritual aspects is vital for raising a generation capable of adaptation, advancement, and facing the knowledge explosion and the age of globalization while preserving their beliefs, attitudes, and values.

Most teachers of Arabic language in the middle school neglect emotional goals in planning, implementation, and evaluation, focusing more on cognitive and skill-based aspects. However, the integration of behavioral objectives in their various forms as demonstrated by studies (Nassar, 2016; Barqouq, 2016; Al-Ghamedi, 2018) illustrates that when a cognitive objective is achieved, this is followed by achievements in both cognitive and skill domains. If a learner understands the meaning of a poetic text, the purpose of which is praise and commendation, they develop an interest and inclination to read more of this type of text. They may even engage in some skill-related responses to apply the orientations and principles contained in these poetic texts. Linguistic competence gives the learner confidence,

contributes to personality formation, strengthens their connection with their nation, and encourages them to adopt its hopes and suffer its pains.

emotional goals constitute the second domain of behavioral objectives, emphasizing the emotional and affective aspects of learners. Through these objectives, learners acquire values and attitudes that foster their emotions and feelings, which are an integral component in shaping their personalities.

Literature review

Numerous studies have been conducted to explore the challenges hindering the achievement of emotional goals in education. Barqouq's study (2016) titled

"Challenges in Realizing emotional goals in Mathematics Education for Upper Primary Students from the Perspective of Teachers" identifies difficulties faced by mathematics teachers in implementing emotional goals, particularly in relation to the content of the mathematics curriculum. These challenges were found to be related to variables such as the teacher's qualifications and experience. Interestingly, this finding contrasts with Maleki and Al-Ghamedi's research (2019), which highlighted significant difficulties associated with mathematics textbooks and professional development, indicating a high level of complexity in both of these areas. Additionally, moderate challenges were observed concerning the role of mathematics teachers and the affective component. Both studies emphasize the importance of in- service training for teachers to effectively integrate and assess emotional goals in elementary education and recommend enhancing mathematics textbooks with activities that promote the affective aspect.

Moreover, Bali's investigation (2020) titled "Challenges in Applying Affective and Skill-Based Objectives in Remote Education During the COVID-19 Pandemic in Indonesia" uncovers further obstacles in implementing emotional goals in distance education, touching upon issues related to student discipline, honesty, responsibility, and motivation. Bali's study advocates for making the learning process more appealing to students and nurturing values like responsibility and honesty by intertwining knowledge with the affective domain.

Furthermore, Gungor and Gecikli's study (2021) and Putinar and Kiattkomol's study (2022) underscore the adverse role of anxiety in students' motivation to learn. They both emphasize that implementing emotional objectives in teaching significantly reduces anxiety levels among students, fostering high self-confidence, strong motivation, and collaboration among learners.

Indeed, there exist several studies that have addressed other topics related to the attainment of the affective domain. For example, a study conducted by Melisa and her colleagues (Melisa & Others, 2022) aimed to investigate the influence of songs on achieving the affective domain for students in English as a Second Language listening classes. The results of this study demonstrated a positive impact of songs on the realization of affective aspects among students. The students attempted to memorize content by singing the songs and were encouraged to develop self-appreciation and a sense of values. This, in turn, stimulated their motivation. The researcher and others recommended the exploration of alternative methods to enhance the affective domain and its integration with the cognitive domain.

Moreover, Dorji's research (2021) titled "Neglected emotional goals in Higher Education Teaching and Learning" sheds light on the commonly disregarded affective domain in higher education. The study reveals that the emotional aspect receives minimal attention from educators and educational programs, leading to a weakened student-teacher relationship. Dorji's work advocates for additional research in the affective domain and highlights the necessity of educating instructors to cultivate affective skills, integrate them into lesson planning, and assist students in acquiring them.

In summary, these studies collectively emphasize the vital role of emotional goals in education. To optimize the learning experience, addressing the challenges associated with integrating affective goals and investing in teacher training is imperative. By amalgamating these insights and recommendations, we can significantly influence the educational landscape, creating more engaging and enriching learning environments.

emotional goals and Their Classifications

Hamadneh and Bani Khaled (2011), as well as Al-Jarban (2019), define the affective domain as "the domain containing objectives that describe changes in interests, attitudes, inclinations, values, and appreciations" (p. 624). Sugano (2021) defines it as the domain encompassing students' positions, interests, motivations, personalities, thinking patterns, behaviors, emotions, and responses to an event, person, or idea.

Through this domain, individuals acquire emotional habits, clarify their inclinations, values, and attitudes, determine their taste, and become capable of achieving affective responses within an affective behavior in situations that stimulate such behavior, thanks to structured educational experiences built on predefined behavioral objectives.

Additionally, conscience is a motivational psychological sensation that directly affects thinking and perception. It triggers a connection with emotions and feelings, linked to values derived from traditions, beliefs, and attitudes that drive learners to adopt affective behavior towards events, subjects, and individuals. emotional goals relate to opinions, inclinations, positions, values, and adaptation methods to life (Nassar, 2016).

Krathwohl presented a comprehensive learning taxonomy within the affective domain as follows:

Receiving: At this level, learners exhibit an interest in a particular issue or topic. The progression of this level moves from simple awareness to general attention to stimuli and ultimately acceptance. Here, learners become prepared to engage emotionally and cognitively. Pedagogically, this level concerns stimulating the learner's motivation and interest, representing the lowest level of the affective domain. The learning outcomes differ from simple awareness of important matters to selective interest by the learner (Sahrawi & Najat, 2018).

Responding: Learners progress from limited participation to active, positive involvement at this level. They take a stance on a particular issue. Learning objectives at this level emphasize accepting responses, such as completing an assignment. The desire to respond may extend to volunteering for extra readings or engaging in enrichment activities related to the subject matter. The learner accepts, is convinced by, and feels satisfied with the response (Saadah & Abudiah, 2021). The learner moves from submission and compliance to a voluntary inclination towards the response, free from feelings of fear, hesitation, doubt, or reluctance. verbs such as: Compliment, Respond, Volunteer, Conform with, Show affection for, Support, and Desire are indicative of this level (Nassar, 2022).

Valuing: At this level, the learner expresses the value of behavior, phenomena, or things through consistent positions in their behavior, indicating their commitment and sincerity to what they have committed to and believed in. In this level, the learner acquires a specific attitude and perspective, characterizing their behavior with a degree of stability and consistency. The learner's behavior and opinion reflect the degree of attachment to the acquired value and its branches, commitment, and appreciation. The learner forms a pattern of harmonious values, free from conflict and contradiction. Some procedural objectives at this level include: Defend, Propose, Commit to, Volunteer, and others (Shamoun, 2021).

Organization: This level is characterized by the emergence of a value system characterized by internal consistency in the learner. This is achieved through comparing values with one another, resolving inconsistencies, and then linking

and assembling them. The learner constructs a balanced and adaptable system by acquiring new values. At this level, the learner is capable of gradually connecting, arranging, and organizing the acquired values according to their vision, preferences, readiness, and procedural actions like: Support, Rely on, Adhere to, Influence, Balance, and Organize (Al-Adini et al., 2015).

Complex Characterization by Value (Discrimination or Valuing): At this advanced level, the beliefs, ideas, values, and attitudes are defined. The learner forms distinctive self-characteristics that set them apart from others, becoming unique individuals. The learner can give value to something or a specific phenomenon. Learning objectives at this level range from simple acceptance of value to adopting and committing to this value. Procedural actions can include: Evaluate, Appreciate, Value, Support, Object, and Accept (Fadel, 2022).

It is also important to note that the three domains of educational objectives, as classified by Bloom, namely the cognitive, affective, and psychomotor domains, are interconnected and interdependent. Cognitive and psychomotor objectives are inherently linked with affective goals, as learners need motivation, responsiveness, and enthusiasm to effectively engage in cognitive and psychomotor tasks (Nassar, 2016).

The pursuit of affective development is a means to an end, a principle advocated by modern education. Curricula and educational frameworks have singled out affective education as an integral component, considering it fundamental in curriculum design. Its aim is to prepare a discerning, aware generation capable of positive interaction with life and the surrounding world, fostering creativity and innovation (Mousa, 2018).

This perspective aligns with the constructive school of psychology, established by the psychologist Font. This school emphasizes the role of affect in knowledge acquisition, asserting that knowledge emerges from the learner's accumulated prior knowledge and that understanding results from the interaction between existing knowledge and new information (Zayer and Dakhel, 2015).

Formulation, Application, and Assessment of emotional goals

The underutilization of the affective dimension of objectives by educators can be attributed to prevailing and erroneous beliefs. Some teachers mistakenly assume that it is impractical to achieve emotional goals within the confines of a single instructional session. This misconception arises from the perception that emotional goals necessitate an extended duration for attainment. Furthermore, these objectives may be deemed challenging to incorporate into the instructional context or during evaluation due to their typically abstract formulation.

Conversely, Sahrawi and Najat (2018) have identified reasons for the reduced measurement of learning outcomes in the affective domain in comparison to their cognitive counterparts. These include:

The belief in the difficulty of assessing the targeted trait.

The challenge of observing behavior that signifies this trait.

Occasional ambiguity in results that defies straightforward interpretation.

The prevailing view that formulating emotional goals is inherently challenging.

Teachers' prioritization of attaining cognitive domain objectives over affective ones.

Perceptions of the instability of emotional traits, leading educators to view their attainment as time-consuming.

The influence of personal biases, such as response styles and preferences, on the measurement of emotional traits.

Despite persistent efforts in developed countries to operationally formulate emotional goals, there are still challenges in precisely defining and articulating these objectives. These difficulties can be mitigated through the following steps (Al-Adini et al., 2015):

Determine the overarching affective objective and classify it within one of the affective domain levels.

Identify the behavior exhibited by learners with a positive disposition, indicating their acceptance of the objective to be assessed.

Identify the behavior exhibited by learners with a negative disposition, indicating their rejection of the objective to be assessed.

Define the scenario that discriminates between the two behaviors.

Select scenarios that can predict the types of behavior.

Shamoun (2021) highlighted that a fundamental prerequisite for the formulation of objectives across its three domains is their precise and unambiguous articulation, leaving no room for varied interpretation. These objectives should encompass observable and measurable behaviors, aimed at educational outcomes rather than merely focusing on the learning process. Additionally, they must be suitable for the learners' capabilities while embracing all cognitive, affective, and psychomotor dimensions. These objectives should align with the principles of learning, including:

The Principle of Readiness: Ensuring that objectives are age-appropriate for the student population and congruent with their prior experiences.

The Motivation Principle: Establishing a connection between objectives and students' preferences, readiness, and interests.

The Principle of Persistence of Learning Effects: Ensuring that objectives yield lasting impact on learners over extended periods.

The Transfer Principle: Ensuring that educational outcomes are transferable to various instructional contexts.

According to Fadel (2022), the evaluation of emotional goals can be achieved through personal interviews, involving the preparation of a set of objective questions related to the feelings of satisfaction, acceptance, or rejection. These questions incorporate non-cognitive content and may also include open-ended inquiries and closed surveys revolving around emotions, attitudes, values, and the perception of acceptance or non-acceptance.

Furthermore, supporting the assessment of affective aspects can be facilitated by establishing specific indicators and criteria for each educational level. This involves training teachers in the analysis of affective traits into observable

performance indicators for evaluation and measurement. Continuous documentation of learners' achievements in the affective domain is also essential for determining their performance level and assessment (Hasib, 2020).

Research Procedures

To achieve the study's objectives, the researcher employed a descriptive survey methodology. This approach involves studying a phenomenon in its real-life context and providing a detailed description, clarification, and analysis of its characteristics. It aims to ascertain the extent, size, or correlation of the phenomenon with other variables. This methodology was chosen due to its compatibility with the nature of the study's data.

The study utilized a questionnaire as a research tool, which was designed and divided into three dimensions, each comprising ten items. These items were designed to address the study's research questions, seeking answers to these inquiries. In the subsequent step, the questionnaire was subjected to expert validation, where a group of experts provided their opinions and feedback on the questionnaire items. Percentage ratios and arithmetic means were used to analyze each item within the questionnaire.

Study Sample

A total of 260 questionnaires were distributed to participants within the random sample. The sample was stratified based on personal variables, which included gender, educational qualification, educational region, years of teaching experience, and completion of a training course on formulating, implementing, and assessing emotional goals during their service.

Study Results

The results of the study indicated that the verbal significance of the impediments to formulating emotional goals was low, with an average of 2.39. The item related to the repetition and overlap of emotional goals obtained the highest score with a moderate degree of 2.81. However, the item concerning the difficulty of deriving emotional goals from the general objectives of the Arabic language course received a low score of 2.15.

The verbal significance of impediments to implementing emotional goals was moderately significant, averaging 3.02. The item associated with teachers' insufficient skill in utilizing emotional goals in linguistic proficiency ranked first with a high score of 3.65. On the other hand, the item regarding the lack of sufficient time for implementing emotional goals during class time ranked last with a moderate score of 2.75.

The verbal significance of impediments to assessing emotional goals was moderate. The item related to the conflict between learners' inclinations towards linguistic proficiency and their attitudes due to perceived difficulty ranked first with a high average score of 3.67. Meanwhile, the item concerning the difficulty of altering a negative attitude in learners scored a moderate average of 2.84.

The study results also indicated that there were no statistically significant differences in the average assessment of the sample participants regarding the impediments to using emotional goals at a significance level (α=0.05). These differences were attributed to their personal variables, which included gender, educational qualification, educational region, years of teaching experience, and completion of a training course on formulating, implementing, and assessing emotional goals during their service.

Conclusion

Despite the significance of emotional goals and their close association with the Arabic language, a language rich in various skills such as expression, spelling, reading, linguistic proficiency, listening, speaking, and writing, which demand meticulous planning, execution, and assessment from teachers, daily lesson plans often lack this dimension of objectives.

The study results indicated a limited awareness among teachers of the nature and importance of language. Furthermore, teachers exhibited a limited knowledge of the different branches of language, their orientations, and the challenges in

formulating and implementing emotional goals. Educational success hinges on the harmonious integration of the three vertices of the educational process triangle represented by the curriculum, the teacher, and the textbook. The learner's success and the synergy of the school curriculum and the textbook are dependent on the leader of the educational process, namely the teacher. The role of a teacher is no longer confined to mere instruction, nor is their effort measured solely by the completion of syllabi, the volume of their voice, or the preparation of achievement tests. It extends beyond the classroom to their ability to create a stimulating educational environment characterized by warmth and respect, leaving a lasting impact beyond the boundaries of the classroom.

Therefore, the study calls for the inclusion of curriculum plans, performance guides, and teacher assessments, instructing teachers on how to formulate, apply, and assess emotional goals. Moreover, it suggests the organization of training courses for teachers on the implementation and assessment of emotional goals.

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Scientific Literacy Education and Students with Intellectual Disabilities of Kuwait

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Abstract

Using content analysis method, this study analyzed the science content in an alignment with the Arabized/adapted/modified Next Generation Science Standards NGSS, Kuwait Ministry of Education science standards, and scientific practices and literacy dimensions. The study's purpose was to explore whether the science book, studied at the Intellectual Rehabilitation School of Education (IRSE), content illuminates learners with intellectual disabilities with the needed scientific practices functionally. Findings demonstrated that the majority of the topical areas in the content were not aligned to the credited standards and/or dimensions. The use of scientific practices was not available either. Consequently, the book does not provide students with intellectual disabilities scientific literacy experiences needed to encounter life matters and situations.

Keywords: content analysis, scientific literacy, intellectual disabilities, functional science

Introduction

All students with and without disabilities have the right to obtain a full educational access to knowledge that leads them to acquire adequate scientific literacy, practice and eventually authentic inquiry/discovery opportunities (Knight, Wood, McKissick, & Kuntz, 2020; Spooner, Knight, Browder, Jimenez, & DiBiase, 2011). International legislations such as Individuals with Disabilities Education Improvement Act of [IDEIA] 2004, and No Child Left Behind [NCLB] Act of 2001, mandated the importance of maximizing students with exceptionalities' opportunities accesses to learning, especially the general education curriculum to the maximum extent possible (IDEIA, 2004, NCLB, 2002, Spooner, Ahlgrim-Delzell, Kohprasert, Baker, & Courtade, 2008). Clarke, Haydon, Bauer, and Epperly (2016) stated that the laws of IDEIA and NCLB increased educators' roles and concertation to explore most appropriate and adequate ways to involve and support students with disabilities, including students with intellectual disabilities in acquiring learning experiences and academic content (Simpson, 2004). The national Kuwaiti legislation: Law 8/2010 of Individuals with Disabilities Affairs (2010) also ensured the accessibility to general education learning environment including content and knowledge to all students with exceptionalities with different disability category/classifications.

One of the essential topical areas, and content fields that is the focal of several educators teaching students with and without disabilities in general and/or special education is science. In essence, scientific literacy (i. e., understanding the science nature, building/establishing core science concepts) and practice (i. e., phenomena investigations, life science, solving natural world problems) are school-based experiences needed for all students (Jasim, 2002). The knowledge about natural world around us offers students with chances to improve new interests, gain ideas/themes of their environments, shaping their learning skills and experiences that would be helpful in their both in and/or post school lives (Knight et al., 2020). Osborne (2014) indicated scientific content including concepts and practices leverage students' abilities asking questions/queries, analyzing themes/data, and communicating such information, utilizing them in multiple school and life contexts.

Literature Review

Scientific literacy is one of the highly significant learning domains that should be fulfilled for all students. Jasim (2002) indicated that an individual's life participation cannot be accomplished without the use of scientific literacy. Scientific literacy is one of the fundamental pillars in science area and the entire educational process. The ultimate goal of science content and instruction is to illuminate students with scientific literacy and develop their practices (Berk, 1992). Jasim (2002) defined scientific literacy as learning the areas of knowledge that targets understanding the nature of learning and technology and relation between them. He indicated that scientific literacy involves the basic scientific skills that should be functionally acquired by students, increasing students' interests and attitudes toward science and learning. Scientific practices are core parts of scientific literacy sought by science instructors (Jasim, 2002).

Aligning science content to credited science standards, Jasim (2002) explained the notion that science standards of state of Kuwait (Ministry of Education [MoE], 1996) focused on: (a) helping students to deepen their beliefs of the creation of universe/cosmos, (b) the functional acquisition of scientific facts and concepts, (c) developing students' mental and functional scientific skills, and (d) improving learners' scientific practices by developing their scientific literacy. International standards such as The Next Generation Science Standards [NGSS] (2013) included an increased emphasis on science practices and teaching them to accelerate the level of scientific literacy to all learners. National Research Council [NRC] (2012) defined science practices as scientists' habits and skills. Science practices defined by NGSS include: (a) asking questions, (b) the use of models and developing them, (c) planning and carrying out scientific investigations and explorations, (d) the analysis and interpretation of data, (e) the use of mathematical and computational thinking skills, (f) construction of explanations, (g) engagement in arguments using evidence, and (h) obtaining, evaluation and communication of information.

Prior research implicated that learning scientific practices is highly essential for real-life situations of all students including with disabilities (Knight et al., 2020). When students, with or without disabilities acquire and improve their scientific practices, they will eventually be able to generalize and apply them in varied contexts/situations (Miller, Doughty, & Krockover, 2015). Students with special needs (such as with intellectual disabilities) should be taught science skills that are generalizable in-and-out-side school contexts to ultimately affect the overall quality of their lives (Spooner et al., 2011). Knight et al. (2020) recognized that science practices help students with intellectual disabilities ask questions and solve real-life problems.

Science Literacy and Students with Intellectual Disabilities

The Kuwaiti Law of 8/2010 mandates the essential need to provide appropriate education along related services to ensure students with special needs, including intellectual disabilities' learning and involvement in community, work and production as any citizen without exceptionalities. Thus, the need for learning qualified knowledge, academic content such as science practices is highly crucial to give them the right to access education, preparing them for being self-empowered and dependent, having adequate and appropriate life welfare. National (MoE, 1996) and international (NGSS, 2013) standards of science emphasized the importance of educating all students scientific literacy, involving scientific practices for the purpose of: preparing the individuals for life demands with required knowledge, socialization, and awareness of natural, scientific phenomena around them. Scientific literacy emerged in national and international standards (i.e., MoE, 1996; National Research Council [NRC], 1996). In these standards, there was a shift from memorization and mastery levels in scientific content and facts to more understanding and application of such scientific knowledge (DeBoer, 2000; NRC, 2000). Teachers could, with the use of standards frame, blend science literacy with goals that enhance students with intellectual disabilities socialization by certain procedures: (a) using scientific information/facts in order to make daily choices/selections, (b) engaging in discussions about areas connected to science and technology, (c) sharing excitement and personal enjoyment from understanding about the natural world and phenomena, (d) launching and working on activities that accelerate and enhance the skills of reasoning, thinking, creativity, decision-making, and problem-solving, (e) working as a productive citizen, making their country competitive in the global market (NRC, 1996). All of these procedures lead to the instruction of functional lessons that both achieve functional skill goals and linked to science standards, and eventually helping individuals with intellectual disabilities gain, perform/apply knowledge, socialize, improve as productive, and effective members/citizens in their nation.

Research Purpose

The current study purposed to analyze the scientific content of first grade science book studied by 1st Grade students with intellectual disabilities at the Intellectual Rehabilitation School of Education (IRSE), a public Special Education school in Kuwait. To fulfill such purpose research questions were:

How does science textbook's content illuminate students with intellectual disabilities with needed primary scientific literacies and knowledge?

Does the content of this textbook construct the required scientific skills for learning science and accordingly improving the students with intellectual disabilities' learning outcomes?

Methodology

Research Design

The study used content analysis method to analyze and decode the science textbook content of IRSE, Grade 1. Using the method of content analysis would give in depth thorough information and ideas (Judeh & Harb, 2018) about the book' scientific contents, topics and how it illuminates students with scientific literacies needed for their quality and prosperity of life and living especially those with intellectual disabilities.

Study Sample

As abovementioned, science textbook of IRSE, Grade 1, latest edition of 2017/2018 was assessed. All book chapters are being instructed in the entire academic school year. Major topical areas of the science book were: House and Human Being, School: Why and how we go to school, Things Around Us: Alive and non-alive Beings, Animals, and Plants. See appendix A for detailed topical areas of the book.

Instrument and Data Analysis

Referring to 1st grade, NGSS' (2013) practices and DCIs, and MoE (1996) standards, and scientific literacy dimensions (Jasim, 2002), the researcher created a rubric that involved modified/accommodated/adapted standards and/or criteria to analyze the science content of the book. The researcher selected the standards/CDI/practices/scientific literacy dimensions (Jasim, 2002; MoE, 1996; NGSS, 2013) for the rubric.

For analyzing data, the entire textbook was independently read and evaluated by two raters specialized in science education and literacy. The raters analyzed and assessed if the rubric items/standards were available in the content of the book, and full percentage of 10% was given if the item was available, half the percentage (5%) was assigned if the item was partially available and 0% was given for unavailable items/standards.

Results

Results demonstrated that a few of the scientific basic skills (introduced in the rubric thread and items) were to some extent available in the science, 1st grade book taught in IRSE. Other main concepts represented in the rubric items were not available. For instance, for the first rubric thread "understanding nature of science: planning and carrying out scientific experiments", and its items were not available in the content science book. The thread and its items got 0%. Results showed that essential topical areas of (i.e., wave traits, lights and their impact in our lives in illuminating surroundings) were not tackled at all in the 1st grade science book. Standards of NGSS along with scientific literacy dimensions and standards emphasized the notion of teaching basic science concepts and correlating them to our daily life matters/situations. Yet, this aspect was not available in the content of the science book. The second thread in the rubric "constructing explanations and designing solutions", results demonstrated that only two content areas on this thread were to some extent available (recognizing plants' parts and types, however, without any further explanations on where and how they would grow). The concept of living species' (plants) generation is to some extent presented in a very abbreviated way (demonstrating it in a line or two that plants can grow and generate like human beings). There was no information about the generation and inheritance traits/genes of other living species (like: humans and animals), and how human beings are living creatures have genes like their parents as indicated one of the essentially core ideas and topical areas that should be taught to first grade students in NGSS (2013). The book did not connect the concept of plants, as living creatures, to the nature of Kuwait either. It does not introduce the environmental/agricultural nature of Kuwait, and what plants could grow in Kuwaiti, desert land. Only 20%, for the thread of constructing explanations of main concepts and designing solutions was available in the content. This represents the notion that learners with intellectual disabilities are not gaining a lot of information that enhance their knowledge of life, living, surroundings, and their traits. They are neither experiencing knowledge, nor constructing it. Accordingly, they cannot independently use it when needed in new situations (i.e., learners with intellectual disabilities cannot differentiate and/or explain why dates can be planted in Kuwait, whereas lemons, for instance cannot be grown in Kuwait's nature).

Results manifested that the content of science, 1st grade book did not provide several needed basic scientific concepts and themes needed for first graders. Research data revealed that 72.22% of the threads/items in the rubric, related to building scientifically basic themes, carrying out scientific experiments, observing natural phenomena, collecting, analyzing and interpreting data were not at all provided. Only 27.77% of the theme threads/items were partially (to some extent) available. This is an indicative that the content does not provide learners with intellectual disabilities opportunities to engage in scientific practices which increase their scientific literacy and accretion of their interests and appreciation of science. In essence, prior research emphasized the importance of scientific literacy, including practices for students with supportive needs such as intellectual disabilities. Teaching students with intellectual disabilities scientific practices provides them with opportunities to learn and investigate natural phenomena and relate them to their daily life. They could communicate the challenges they might encounter to peers and/or adults around them, being more responsible of how to deal with these matters (Knight et al., 2020). As previously indicated by Browder et al. (2004), successfully learned content shapes students' learning skills, positively impacting their learning outcomes to help them fulfill both learning and life demands in-and-post school contexts (Jimenez & Staples, 2015). See Figure 1 for visual display/representation of data analysis.

Results indicated that the content did not concentrate on functional skills delivery to students with intellectual disabilities. It had little portion, (only obtained 5%), of using universe components (like water) in daily life skill(s) such as cleansing (i.e., washing clothes, brushing teeth and taking bath and/or shower). Other functional skills (like: the use of technology to predict weather, distillation of sea water to be drinkable and fresh, knowing the weather status from the temperature, or the use of animals' skins to produce/making clothes.. etc.) were not tackled at all in the science book (obtained 0%). This result does not correspond with prior research that function of the content is the key to access this content, along with meaningful and productive learning outcomes of students with intellectual disabilities (Miller, 2012). This result would bring up the theme that learners with intellectual disabilities are not benefiting from the content, especially in enhancing and improving their functionally scientific skills. Accordingly, they would not be able to generalize, transfer, and apply what they learn to new contexts/situations. Learning and using functional skills by students with intellectual disabilities enable them to apply such skills in performing daily routines, tasks, chores and communicate them with peers and/or adults in-and-out school contexts (Griffin, League, Griffin & Bae, 2013; Root, Cox, Hammons, Saunders, & Gilley, 2018).

Conclusion

Equity for all students in accessing and learning about their world could be achieved by providing appropriate supports (Spooner, McKissick, Hudson, & Browder, 2014), adequate creation and delivery of content area(s). Students with exceptionalities, such as intellectual disabilities require how "to function independently through incidental

learning" (Knight et al., 2020, p. 338). The delivery of pivotal and/or functional skills in a content needs to include the opportunity to learn about that science content, being scientifically literal through experiencing the science practices (Courtade, Browder, Spooner, & DiBiase, 2010; Spooner, McKissick, & Knight, 2017). As indicated by Knight et al. (2020), students with intellectual disabilities would not be able to utilize the learning breadth of science content in their learning along with social environments, developing their scientific literacy, technology knowledge, sharing scientific attitudes and interests if they were not given the opportunities to do so.

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Church Respond To Gender-Based Violence Pandemic: A Case Study Of South African Churches.

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Abstract

Gender-Based violence (GBV) is experienced in every corner of the world, however, in South Africa; it is a pandemic rooted deep in tradition, religion, and social culture. Some of the effect of this pandemic is in violation of human rights and human dignity that also goes against every aspect of Christianity. Therefore, this paper addresses how the churches in South Africa (SA) are responding to Gender-based violence. The focus of this paper is on the church's response to gender based violence within the context of South African churches. The findings of this paper addressed various ways the churches can take a stand against gender-based violence. Furthermore, the ways in which the church can help fight against Gender-Based violence are also articulated. The paper argues that most churches identified violence against women as one of the priority concerns of the international community and one particularly deserving of urgent response from the church. In conclusion, the paper shows that the church should do more Gender-Based violence awareness and advocacy campaigns in the community, more rehabilitation activities for victims of GBV in the community, and refer perpetrators of GBV that are in the church for legal advice and to the SA police services.

Keywords: Church, Community, Gender-based violence, Apocrypha, Patriarchy..

Research on the Training Model of Innovative Talents in Universities Based on the Concept of STEM Education

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Abstract:

As an important combination of the first resource of talents and the first productive force of science and technology,, universities undertake the important mission of achieving original breakthroughs in basic research and cutting-edge technology fields, and enhancing the country's original innovation capabilities. According to statistics, 70% of the major scientific and technological achievements that have affected human life so far were born in Research universities. However, judging from the current research situation in universities, a complete teaching system that combines theory with practice has not yet been established in terms of cultivating students' innovative and entrepreneurial abilities, and extensive reference and in-depth research are still needed. STEM education advocates interdisciplinary integration, encourages students to look at the world with an discipline-integrated thinking, and attaches importance to the cultivation of students' creative and practical abilities. Onthe premise of defining the basic concept of STEM education, this paper first analyzes the problem of traditional innovative talent training models in universities. Then combined with the interdisciplinary, intersectionality, practical and exploratory nature of STEM, it discusses the practical teaching mode of talent training in universities, and the scientific research enlightenment mode of developing talent training in universities. Finally, an innovative talent training system in universities based on STEM education concept is constructed from the perspectives of talent training target system and talent training curriculum modules.

Keywords: STEM; education Talent; Innovation; Entrepreneurship

Point-of-care biochemical tests based on digital camera

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Abstract

Biochemical assays based on digital cameras as a detector have a growing role in the diagnosis of various pathological states. The general accessibility of digital cameras makes them a suitable tool for measuring of coloration of biochemical reactions when a point-of-care test should be developed. In this presentation, an example of the diagnostical use of colorimetric strips and a digital camera integrated into a smartphone is used for the diagnosis of poisonings by neurotoxic compounds. 3D printed pads treated with reagents substrates 2,6-dichlorophenolindophenyl acetate, indoxylacetate, ethoxyresorufin and methoxyresorufin were prepared and tested for the assay of cholinesterases as examples of biochemical enzyme marker. The colorimetric assay showed good sensitivity and low limits of detection for cholinesterase markers. The assay was shown to be a powerful test for the diagnosis of poisoning by various neurotoxic compounds such as pesticides, drugs, and natural secondary metabolites. The assay can be used without specific manipulation, education of staff, or the use of sophisticated analytical instruments. The findings presented here have practical applicability.

The Effect of Shell Wall Line Count on the Mechanical Properties of PLA Printed Parts

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Abstract

The paper illustrates the effect of shell wall line count on the mechanical properties of PLA 3D printed parts using fused deposition modeling (FDM) technology. A number of 82 samples were tested under uniaxial tensile loading using an electrical load machine in room temperature. The specimens were designed according to ASTM D638-14 (dogbone shape). The variable printing parameters were raster angle (RANG), infill density (IDEN), and shell wall count (SHWC). A set of 24 combinations were designed based on RANG ranges between 0º, 30º, and 60º, IDEN varies from 25% and 85%, and SWC changes from 0, 2, and 4 wall counts. A comparison study is presented to investigate the effect of SWC on the mechanical properties of the specimens. The study ends with suggestions and recommendations for higher strength while using less material.

Keywords: Fused deposition modeling, raster angle, infill density, shell wall count, Mechanical test.

Introduction

Additive manufacturing, also known as 3D printing, is a revolutionary technology that has transformed the manufacturing industry. Unlike traditional manufacturing processes that involve subtracting material from a block to create a shape, additive manufacturing builds objects layer by layer, typically from a digital model. This innovative approach offers numerous benefits and has the potential to revolutionize industries across the board. One of the key

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advantages of additive manufacturing is its ability to create complex geometries that are challenging or even impossible to achieve through traditional manufacturing techniques. This enables designers and engineers to push the boundaries of what is feasible, resulting in highly customized and intricate designs. Additive manufacturing also allows to produce lightweight structures, optimizing material usage and reducing waste.

Moreover, additive manufacturing offers significant time and cost savings. Traditional manufacturing often requires the creation of molds or tooling, which can be expensive and time-consuming. In contrast, additive manufacturing eliminates the need for these additional steps, reducing both production time and costs. This technology also provides shorter lead times, allowing for rapid prototyping and faster product development cycles.

Additive manufacturing is not limited to a specific industry. It has found applications in aerospace, automotive, healthcare, consumer goods, and many other sectors. In the aerospace industry, for example, additive manufacturing has been used to produce lighter and stronger components, leading to more fuel-efficient aircraft and reducing emissions. In healthcare, additive manufacturing has enabled the production of customized medical implants and prosthetics, improving patient outcomes. Additive manufacturing is a game-changing technology that has the potential to revolutionize the manufacturing industry. Its ability to create complex designs, reduce costs, and shorten production times makes it a highly versatile and valuable tool for various industries. As this technology continues to evolve, we can expect to see even more innovative applications and improvements in the future.

Plastic made of polylactic acid (PLA) is a thermoplastic and recyclable material. When heated, this material softens and can be extruded into complex shapes and parts. After cooling, it regains its properties and strength. PLA comes in three forms: powder, flat sheets, and wires. The global market size of PLA was US$525 million in 2020. According to studies, its compound annual growth rate will be 18% between now and 2028. The demand for PLA is globally increasing because of its low carbon emissions, dimensional stability, and UV resistance when compared to other conventional plastics (i.e., polyethylene terephthalate (PET), polybutylene terephthalate (PBT), and acrylonitrile butadiene styrene (ABS)) (Algarni & Ghazali, 2021; Balla et al., 2021). In 3D printing, the most cost-effective widely used technology is fused deposition modeling (FDM), a form of additive manufacturing (AM). FDM involves the simple extrusion of a filament after the heating process in a nozzle, and the melted plastic is set onto a build plate. The process continues to form layers. The first layer is deposited on the build plates, then cools down and hardens. The next layer is placed on top of the previous layer with high precision to bind and so on, forming the required part shape.

Numerous studies have extensively investigated the behavior of PLA (Polylactic Acid) under both static and cyclic loading conditions. The effects of various FDM (Fused Deposition Modeling) process parameters, such as layer thickness, raster angle, build orientation, infill speed, and infill density have been considered in these studies. Specifically, regarding static loading, researchers including Ahmed & Susmel (2018, 2019), Algarni (2021), Casavola et al. (2016), Chacón et al. (2017), and Pei et al. (2015) have conducted research to examine the behavior of PLA. The results of these studies have shown that the mechanical properties of PLA parts are influenced by the chosen process parameters. Similarly, the effects of process parameters on the fatigue behavior of PLA have been explored. Researchers such as Baptista & Guedes (2021), Ezeh & Susmel (2019, 2020), and Shanmugam et al. (2021) have conducted studies to investigate the influence of different FDM process parameters on the fatigue life of PLA components. Their findings demonstrate the significant impact of these parameters on the fatigue behavior of PLA parts.

In the context of the mentioned design problem for this research, all printing process parameters will be fixed to eliminate their effects. By doing so, the complexity of the research is reduced, allowing for a more focused investigation of other factors affecting the PLA parts' behavior. This approach will provide valuable insights into the specific aspects being studied, without the confounding effects of varying process parameters.The fatigue behaviors of polymers and metallic parts are similar under cyclic loading. Both materials fracture from fatigue at stress levels lower than their yield stresses. The study of polymers fatigue is more recent than that of metal fatigue, which dates to the 18th century (Awaja et al., 2016). Many researchers have concluded that polymer microstructure parameters (i.e., molecular distribution and orientation) have significant effects on mechanical behavior (Meijer & Govaert, 2005). A study in Ref. (Pei et al., 2015) shows a decrease in the ultimate tensile strength and Young's modulus as the shell thickness decreases. Another study in Ref. (Letcher & Waytashek, 2014) examined the fatigue behavior of PLA under fully reversed cyclic loading. Their specimens, having rectangular cross-sections, were fabricated by a commercial 3D printer that printed the specimens flat on the platform with an infill density of 100% and three raster angles (0°, 45°, and 90°). The study showed that maximum stress of cyclic loading fatigue life was not significantly affected by the raster angle. In addition, Ref. (Afrose et al., 2016) studied the performance of PLA specimens in the low cycle fatigue (LCF) regime with load ratio R= 0 cyclic loading. The study showed that specimens with a 45° raster angle

had the highest fatigue life. Moreover, the effect of infill density on PLA fatigue behavior was assessed in Ref. (Jerez-Mesa et al., 2017). The study concluded that decreasing the infill density decreases the fatigue life span.

The literature review has uncovered some important findings related to the fatigue behaviour of PLA (Polylactic Acid) parts. Firstly, it has been observed that the raster angle, which refers to the orientation of the filament strands in the printing process, has a negligible influence on the fatigue life of PLA components. This implies that varying the raster angle does not significantly affect the fatigue performance of the parts. Secondly, the infill density, which determines the amount of material used to fill the internal structure of the part, plays a crucial role in fatigue life. Decreasing the infill density leads to increased air gaps between layers, which act as notches within the specimen. These notches can have a drastic impact on the fatigue life, compromising the structural integrity of the PLA parts. Furthermore, the literature review highlights that there is a relatively small amount of research on the fatigue performance of PLA parts in the context of rapid manufacturing. In comparison to the extensive studies conducted on the static loading behaviour of PLA, the number of studies focusing on fatigue behaviour is limited. This suggests that there is a demand within the research community for more experimental and computational studies specifically addressing the fatigue performance of PLA parts.

Experimental Process

2.1 Parts Fabrication by FDM

The study conducted experiments using three different notch radii to investigate the influence of notch size on the fatigue life of PLA (Polylactic Acid) specimens. The notches were categorized as sharp notch (SN), medium notch (MN), and large notch (LN), each having specific dimensions indicated in the detailed drawing. The specimens were printed using a Creality 3D printer model Ender-3, which is a commercially available open-source printer. The PLA filament used in the printing process was manufactured by eSUN and had the following material properties: Young's modulus of 2.1 GPa, flexural strength of 75.1 MPa, ultimate tensile strength (SUTS) of 65 MPa, fracture strain of 8%, and a density of 1.246 g/cm3. The PLA filament had a diameter of 1.75 mm and was extruded through a brass nozzle with a diameter of 0.4 mm. The printer settings for the experiments were as follows: the nozzle temperature was set to 206°C, and the build plate temperature was 90°C. The infill layer thickness was 0.12 mm, and the infill density was set to 100%. The printing speed was maintained at 18 mm/s, and the raster angle, which refers to the orientation of the filament strands, was set to 0°, aligning with the direction of the applied axial load. The specimens had smooth lateral surfaces, and the contour shell thickness was 0.4 mm.

Experimental Results and Theoretical Modeling

The experimental fatigue results were analyzed and presented using a log-normal Sa-Nf chart. In this chart, Sa represents the amplitude stress, while Nf represents the number of fatigue life cycles to full fracture. The experiments aimed to investigate the influence of different notches on the fatigue life of PLA (Polylactic Acid) specimens under varying positive mean stresses, with a load ratio (R) of 0.1.

The plotted charts clearly illustrate that the fatigue life of the PLA specimens decreased as the notch radius decreased. This indicates that the presence of notches, causing stress concentrations, has a significant detrimental effect on the fatigue life of the PLA material. The experimental results reveal that the fatigue life reduction due to the stress concentration caused by notches was more than 50%. Therefore, it is essential to consider the notch effect or stress concentration when designing parts to ensure sufficient fatigue life. Moreover, the charts also analyze the effect of mean stress on fatigue life, considering the different notches. The results demonstrate that increasing the mean stress further reduces the fatigue life of the PLA specimens. However, it is observed that the influence of mean stress on fatigue life is more significant in the low cycle fatigue (LCF) regime compared to the high cycle fatigue (HCF) regime.

This suggests that the mean stress effect has a relatively smaller impact on the fatigue life of PLA parts in the HCF regime. The charts clearly demonstrate that the fatigue life of the PLA specimens decreased as the size of the notch radius decreased. This indicates that the presence of notches, which cause stress concentrations, has a significant impact on the fatigue life of the PLA material. The experimental results reveal that there was a reduction of more than 50% in the fatigue life of the specimens due to the stress concentration caused by the notches. In addition to the influence of notches, the effect of mean stress on fatigue life was also examined. The charts illustrate that increasing the mean stress resulted in a reduction in fatigue life. However, it was observed that the effect of mean stress on fatigue life was less prominent in the high cycle fatigue (HCF) regime compared to the low cycle fatigue (LCF) regime.

Summary and conclusions

The uniaxial fatigue behavior of PLA specimens was extensively studied through load-controlled fatigue tests. The experiments considered three fatigue load ratios and specimens with three different notch sizes: large, medium, and sharp notches. Based on the theoretical analysis and experimental outcomes, the following conclusions were drawn:

All specimens were 3D printed using fixed printing parameters and were assumed to be homogenous and isotropic. Therefore, the influences of the printing parameters and environmental temperature were not considered in this research. The focus was specifically on the effect of notches on the fatigue behavior of the PLA material.

The presence of notches had a significant impact on reducing the fatigue life of the PLA material. The experimental results showed that the fatigue life of specimens with notches was reduced by more than 55% compared to specimens without notches. This highlights the importance of considering the presence of notches or stress concentrations in design and engineering applications involving PLA.

The fatigue life under the influence of notches was modeled using the KV Model. The fatigue notch factor, which is commonly used to estimate the effect of notches on fatigue life, did not accurately predict the observed fatigue life reduction in the PLA specimens. However, the stress triaxiality factor was found to be a more accurate predictor of the notch effect on fatigue life.

In summary, the study concluded that notches have a significant detrimental effect on the fatigue life of PLA specimens. The fatigue life reduction due to notches was accurately predicted by the stress triaxiality factor rather than the fatigue notch factor. These findings emphasize the importance of considering notches and stress concentrations in design considerations for PLA components to ensure adequate fatigue performance.

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Strategies to increase women leadership: A case of a University of Technology in South Africa

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Abstract

The absence of women in leadership positions in higher education is attributed to women's psycho-social attributes, attitudes, institutional, and social and cultural aspects (Hoobler, Lemmon & Wayne: 2011). The purpose of this study was to investigate the strategies that can increase woman leadership at a University of Technology in South Africa. A case study design and qualitative approach were selected based on the generated data in an investigation of the perceptions of woman regarding challenges and strategies to increase woman in leadership positions. Participants included woman in middle and senior management ranks and a total of eight participants were selected. The study revealed that women leaders continuously face gender discrimination, male dominancy, and systematic injustice within organizational environments. Furthermore, this study revealed that regardless of efforts to empower and advance women into leadership positions, there is still limited number of women occupying leadership roles in higher education especially in in governance positions such as deans and heads of academic departments. Research reveal that the universities should consider committing to programs, which will help develop woman and prepare them for promotional positions.

Key words: Gender, Discrimination, Attitudes, Strategies and Psychosocial

A Perceptual Evaluation on the Relationship between Place Identity and Collective Memory

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Abstract

Cities of 21st century have transformed into areas where time flows quickly and people's lives are squeezed into their living and working spaces. This global loop imposes the obligation to live on a monotonous axis, far from the concept of pleasure. Individuals and societies simply continue their lives in an existential struggle, in placeless, undefined, identityless urban areas, with a feeling far from the concept of belonging.

When analyzed conceptually, identity is a concept that defines people. Place identity expresses the perception of identity transmitted through people to places and living spaces. In this context, places; They gain identity through the concretization of an emotional accumulation of feelings of belonging, experiences, memories. This concept is expressed as urban identity through cities and place identity through places and spaces. Place identity represents the organized experience of personal feelings. Therefore, what becomes important here is the concept of memory. Because the images, memories and accumulations that form in our minds regarding living spaces are all mixed with a past. Basically emotional ties are fundamentally decisive and when it comes to place identity, the memory created collectively by the individuals and the society living there presupposes the identity of the place.

On the basis of this research, first the literature on the concepts of city and place identity is examined in detail. In addition, the concepts of collective memory and place attachment are evaluated on an environmental and spatial basis and presented as a reading, assimilation and discussion study on the relationship between the concept of place identity and collective memory.

Keywords: Identity, place identity, place attachment, collective memory

Grounding Imaginative Educational Leadership in the Neighbourhood

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Abstract

The benefits of imaginative capabilities tend to be undervalued and overlooked among students, teachers, and educational leaders. This appreciation is lacking as much in scholarly content as it is in educational contexts, a problem that this grounded study of fifteen innovative educational leaders unpacks the black box of how human imagination is developed and applied within teaching and leading practices. In schools, where teachers and educational leaders collaborate to guide the evolution of their school communities, Seashore-Lewis and Whalstron (2011) found that "… the development of improved learning and innovation contexts for teachers, [… stemmed from] the ability of principals to stimulate teachers' innovative behaviour" (p 30). For schools to contend with the complexities and challenges from the unprecedented pace of cultural, environmental, social, system, and technological change requires educators with the imaginative capabilities to conceive and deploy innovations. Therefore, it is arguable that educators would benefit from credible theories that inform how to develop imaginative capabilities.

This study reveals that the imaginative capabilities of educational leaders are developed in imaginative neighbourhoods where they have the proximal freedom to figure out how to value, defend, cultivate, and tap into the spaces and diverse talents that enliven their community's personality and potential.

Teachers' Understandings of the Social and Professional Support Needed to Implement Change in Qatar

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Abstract

Currently, Qatar is implementing an educational reform to enhance teaching and learning in public and private schools. The Qatar National School Accreditation significantly impacted Qatar's private schools, requiring teachers to implement various mandated educational changes. Using House's (1981) types of social support, this qualitative, phenomenological study was designed to explore teachers' understandings regarding the social and professional support they need to implement educational change at an international school in Qatar. To help teachers engage in change, findings revealed that educational leaders need to heed teacher wellbeing during educational reform, educational change should be contextualized and tailored to the needs of teachers, and support should be offered to reduce teachers' stress and facilitate the change process. Recommendations for educational leaders trying to help teachers implement mandated educational change are provided in light of the derived findings.

Keywords: Educational change; Social Support; Teacher development; Teacher stress

The Effects of Mindfulness-Enhanced Language Teaching (MELT) Training on the Teaching Anxiety Levels of Pre-service Teachers

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Abstract

Implementation of mindfulness-based practices into foreign/second (FL/SL) language education has gained popularity recently. Echoing the non-judgmental and non-reactive nature of mindfulness, it is highlighted that mindfulness can help to decrease anxiety, foster motivation, and concentration, and support the well-being of both learners and teachers in the classroom. Mindfulness-enhanced language teaching (MELT) as a novel approach to FL/SL teaching is based on the numerous reported benefits of mindfulness and integrates various mindfulness-based practices such as breathing exercises and meditation practices that can be integrated into actual teaching contexts. This study aims at investigating the effects of a comprehensive and systematic 12-week MELT training on the FL teaching anxiety levels of 32 pre-service teachers within a mixed-method study design. For this purpose, a foreign language student-teacher anxiety scale was administered to the participants before and after the MELT training, and reflective journals were collected throughout the training process. The quantitative and qualitative analyses revealed a significant decrease in the teaching anxiety levels of the participants highlighting the positive effects of receiving training on how to implement mindfulness in FL/SL contexts. The participants also expressed that MELT training helped to boost their self-confidence as teachers, motivated them to stay in the present moment of teaching to find solutions to emerging problems, and helped to decrease their stress levels. The findings of the study shed light on the implementation of mindfulness in pre-service FL/SL teacher education and provide suggestions on the effective integration of mindfulness in teaching and learning contexts.

From Quebec to Palestine: Promoting Urban Agriculture Activities among Al-Quds University Students as a Tool to Support Urban Sustainability and Resilience

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Abstract

Urban Agriculture is here to stay and is defined as the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities. In addition to food production, urban agriculture also offers a wide range of other functions such as energy conservation, waste management, biodiversity, microclimate control, urban greening, economic revitalization, community socialization, human health, preservation of cultural heritage, and education. So, urban agriculture plays a significant role to support urban sustainability based on the SDGs and global new urban agenda (NUA). The association between urban studies and higher education to support urban agriculture as a tool of urban sustainability and resilience, especially under political crisis conditions is not clear very well. Yet, few studies have synthesized knowledge regarding urban agriculture and the role of urban university students to support urban sustainability, especially, in the Palestinian urban environments. Therefore, this study aims to Promote urban agriculture activities among Al-Quds University students as a tool to support urban community sustainability in the city of Jerusalem. This study used qualitative research methods through observation, and interviews with some experts, academics, and policymakers in Montreal City - Canada to get some lessons about how we can promote urban agriculture at Palestinian universities. Also, we used observation, and interview approaches

with Al-Quds University students, academics, and university policymakers to identify the main challenges and potentials for developing the urban agriculture sector on the university campus.

Montreal City in the Quebec province of Canada is one of the best models in the world that support urban agriculture activity. Therefore, in Palestine, we can learn many of the lessons from Montreal city such as how social movements can play an important role in urban agriculture development, especially the role of urban youth in producing food. The urban residents in Montreal pushed the urban policymakers and planners to find the best ways to support and accept farming as an urban activity for sustainability development in Montreal. The private sector can play a positive role in supporting the urban agriculture sector by establishing profit projects in urban agriculture individually, in groups, and in business companies. Montreal universities played a significant role in developing of the urban agriculture sector by establishing urban agriculture projects due to developing a cooperation link between the universities and the NGOs in Montreal. So, in Palestine, we need to push our urban social groups, the private sector, and the universities to start initiative projects to promote the urban agriculture sector in the Palestinian cities.

This study found a highly positive motivation toward the urban agriculture concept among Al-Quds university students and policymakers. Most of the university students agreed with engagement in urban agriculture activities in the university academic and extracurricular activities. However, there was a lack of knowledge among the Palestinian students about the urban agriculture concept, forms, benefits, and risks in urban environments. The role of urban agriculture activities to support urban sustainability among university students was not clear. Therefore, this study highly recommends establishing student groups as civil clusters in cooperation with the university administration and the Palestinian municipalities to support urban agriculture in their universities and cities through transfer the of urban agriculture knowledge, skills, and experiences from the university campus to the urban community for sustainability.

Keywords: Urban Agriculture, Urban University, University Students, Urban Sustainability, Palestine.

Cloud Computing as Instructional Aids from Educational Context: Qualitative Research

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Abstract

The current study aims to identify the using cloud computing in educational context from academic staff point of view at Jerash university. The qualitative approach was employed through semi-structured interview. The sample of the study consisted (14) academic staff in Jerash university at academic year 2022- 2023. The results of the study showed that there are huge advantages in integrating cloud computing in the teaching and learning process. On other hand, the results revealed that some barriers limiting the vital use for cloud computing in educational context. In light of the results of current study set of recommendation were set such as; activate using and integrating cloud computing in educational sciences faculty at Jerash university.

Keywords: Cloud Computing; Instructional Aids; Qualitative Research; Jerash University

Introduction

Recently, information and communication technology (ICT) in educational domain have been developed in rapid way. Many concepts occurred lately like online learning, blended learning and flipped classroom heavily depended on cloud computing. Most of educators store their data through cloud computing and they retrieve information any time any

place in easy way. Another advantaged of cloud computing are cost saving and easy scalability (Furht & Armando, 2010). Efficiency and effectiveness are the main features of cloud computing services (Baharuddin, 2021).

Cloud computing can be defined as "*a model for enabling ubiquitous and convenient on-demand network access to a shared pool of configurable computing resources (networks, servers, storage, applications, and services) that can be rapidly provided and released with minimal management efforts or service provider interaction*" (US National Institute for Standards and Technology which mentioned in Sivakova, 2019) . In this case, cloud computing provides users with reliable data that you can get it from any device in anytime and anyplace, in the contrary there are no obstacles related to hardware and infrastructure development (Sabharwal and Edward 2020).

Cloud computing contributes in making teaching and learning process easier, flexible and effective. In recent days students will not buy storage device like external hard desk. Moreover, conventional lab will replace with virtual lab which is providing a vital learning experience in safe way (Saini, Jyoti & Kaur, 2017). For those features and advantages, higher education institutions represented by universities and colleges are interested in using cloud computing as effective educational tool (Ali et al., 2017).

Educational technology and innovations in genal had certain barriers when integrate them for educational purposes. Cloud computing as those new technology faced certain barriers like; compatibility, lack of standardization and trust issue (Mahmood & Iftikhar, 2018). Other obstacles like privacy which is relevant to personal and important data, and reliability because sometimes cloud computing was out of services for hours, trust in online services were reported as the major barrier of utilizing cloud computing in high education (Abdul Razak, 2009). Finally, internet connection and speed represented the main obstacles of cloud computing, moreover, security issues were reported as the most important issue should be taken in consideration once we adopt cloud computing in education context (Mary & Rose, 2019).

Problem Statement

Currently, data security becomes the main concern for both individual and organization. In educational context, the educators try to reduce financial cost as known by integrating cloud computing the hardware and software applications will be reduced. Moreover, the lecturers and students can reach to information from any mobile devices as long as those devices are connected with internet. The current study tries to find the perceptions of faculty members in educational sciences at Jerash university toward cloud computing.

Research Questions

What are the advantages of cloud computing from faculty members views?

What are the disadvantages of cloud computing from faculty members views?

Research Objectives

To identify the advantages and benefits of cloud computing from faculty members views

To investigate the advantages and barriers of cloud computing from faculty members views

Methodology

Qualitative approach will be employed in the current study through conducting semi- structured interviews. The interviews were conducting with (14) faculty members from educational sciences faculty. Face-to-face interviews were documented by the researchers and analyzed to extract themes

Sampling

The sample of the study consisted of (14) faculty members were chosen from educational sciences faculty in summer semester at academic year 2022-2023.

Results and Discussions

Three themes were emerged from the first question they are mobility, cost and security

Mobility

ten of (14) faculty members reported that the most important advantage and benefit of cloud commuting is mobility Dr. Ahmad says that "students can share the knowledge with their friends and their lectures without bring their own laptop or iPad or tablet". Dr. Ali added that "both of lecturers and students can get on information in any place and in time as long as you have mobile device connected with internet".

Cost

Integrating cloud computing in teaching and learning process could educe the cost for buying mobile devices or preparing technological infrastructure. In this context, Dr Yousef indicated that "*save data and knowledge management need huge number of hardware and software application but by using cloud computing no need to have this numbers of equipment*" Dr. Mohammed pointed that "*we can save cost through reducing the number of technical support as well as maintenance process*"

Security

This is the main factors that reinforce the using cloud computing for academic and educational purposes. Dr. waleed said that "*I can save my exams, syllabuses and research papers in cloud computing such as "one drive" in secure way*" moreover, Dr Adnan added that " *no body can reach your information and your data will not be lost even your mobile devices destroyed, this process gives the trust to the user from one hand and make cloud computing more secure compare with traditional and electronic process*"

The results related to the second question

Three themes were emerged from analyzing second question they are attitudes, technological skills and

Attitudes

Most of students and lectures used to conventional tools and application in saving and managing data, and they don't like to try any innovation. Dr Hassan suggested that" *lecturers did not use cloud computing because they have negative toward it and toward any new technology, I think holding training courses about cloud computing could create positive attitudes toward it*" Dr Ali added that " *attitudes considers as the main barrier that prevent both lecturers and students from using cloud computing, they did use it before but they have negative thoughts and attitudes toward it like it is difficult and need high level of English as well as high level of technological skills*"

Technological skills

All technologies and innovations need basic skills of technology that doesn't mean the individual must be proficient in using technology in this context Dr. Sami "*the major problem in utilizing cloud computing in educational context that most of lecturers have not sufficient skills that help them in integrating that tool in their course material*" Dr. Fadi identified that " *some lecturer and students have not emails or laptops which means they are not familiar with technology so they feel are not able to use this kind of technology in classroom sitting*"

Compatibility

As known most of applications are in English language this lead to that some applications do not fit with Arab context. Dr. Samer "*I try to integrate cloud computing but I have some barriers related to language and some of application don't compatible with educational objectives of course*" Dr. Amer added that "*once move application from certain environment to other some changes appeared which limit adoption process of cloud computing*"

Conclusion

The study tries to discuss the using cloud computing in education context through discussing the advantage and disadvantage of cloud computing. The results revealed that there are a lot of benefits for using cloud computing in higher education according faculty members like; mobility, cost and security. In addition, faculty members pointed that there are some barriers prevents using cloud computing by lecturers and students like attitudes, technological

skills and. In light of the results of current study the researchers recommended that holding training courses about using cloud computing and activated using cloud computing in educational context.

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