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Student Perceptions of a National Healthcare Systems Course: Evidence from a Cross-sectional Survey of Undergraduate Students

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Abstract: National Healthcare Systems are an important aspect to study for health administration students, as they provide them with the knowledge and skills necessary to comprehend the organization, financing, and delivery of health services in a nation. The understanding of national healthcare systems allows students to examine healthcare policies, assess healthcare systems' performance, and recognize the strengths and weaknesses in the health care delivery system. Hence, the purpose of this study is to gain relevant and reliable data from the respondents to find out their opinions, experiences, and perceptions about the National Healthcare Systems (HSM479) course taken by the Bachelor in Health Administration (BA265) students. Data were gathered from 83 students who had finished the HSM479 course via online surveys on Google Forms. A structured questionnaire was created that focused on different dimensions such as Course Content and Relevance, Course Teaching and Learning, Student Engagement and Participation, Knowledge and Skill Development, Assessment and Feedback, and Perception and Satisfaction. The collected data were analyzed using descriptive statistics and inferential statistics. The results revealed high levels of sense of relevance, student satisfaction, and positive learning outcomes among the respondents. Additionally, the course content, students' participation and skill development were significantly correlated with students' satisfaction in taking this course. The findings are consistent with maintaining continuity of higher education healthcare system education in higher education curricula, especially in health administration and allied health programs.

Keywords: *National Healthcare Systems Course, Undergraduate Student, Quality Education, MOOC*

1. Introduction and Background

Healthcare systems are extremely important for providing equal access to health services, for enhancing population health outcomes and for contributing to national development. In today's context, the complexity of health systems, resulting from demographic change, policy changes and technological progress, is increasing, and it is crucial for students engaging in healthcare programs to grasp how these systems operate. However, higher education institutions include courses related to the national healthcare system to give students the basics of national health system governance, financing, service delivery, and health policy.

The National Healthcare Systems course (HSM479) aims to introduce undergraduate students to the architecture, organization, and problems of healthcare systems, both nationally and internationally. This course should enable students to gain a comprehensive understanding of healthcare policies, system governance and the relationship between healthcare stakeholders. The course also seeks to enhance students' analytical skills, as they will learn to analyze healthcare policies, discuss the healthcare system in different countries, and assess the issues in the healthcare sector. This not only helps students in their understanding of health policy but also is vital for those who plan to work in healthcare administration or health policy and public health management.

In HE, the attitudes of students towards a course are generally considered to be a significant measure of teaching quality and learning outcomes. The level of students' engagement, motivation, and satisfaction with the learning process can be impacted by experiences and attitudes towards course content, teaching, learning activities, and assessment. Having insight into students' views on these aspects can offer useful feedback for teachers to enhance curriculum design, pedagogical approaches, and evaluation methods.

The importance of several factors affecting students' perception of a course has been reported in previous studies (Jones, Krost, & Jones, 2021). This includes the pertinence and understanding of course material, instruction, student engagement and participation, learning, acquisition of knowledge and skills and assessment and feedback from teachers. When these elements are utilized effectively, they can help to create a more fulfilling learning experience and boost student satisfaction. As for these factors, however, there is limited empirical evidence that investigates how they work together to affect students' perceptions of courses related to health care, especially at the undergraduate level.

In Malaysia, health care is provided within a dual health care system, both public and private, and it is important that students in health care programs have a working conceptual understanding of the organization and delivery of health care. An assessment of students' perceptions of courses dealing with the healthcare system, therefore, can yield valuable information regarding the effectiveness of current teaching strategies and also suggest areas in healthcare education that need improvement.

Thus, this study focuses on a cross-sectional survey to investigate the perceptions of the undergraduate students about HSM479. Specifically, the research examines the students' perceptions of the main dimensions of the course – course content and relevance, teaching and learning processes, engagement and participation, knowledge and skills development, assessment and feedback, and satisfaction. The study aims to use these variables to establish relationships between them, to find out the factors that affect the general satisfaction of students in the course, and to get evidence-based ideas to improve healthcare education.

2. Literature Review

Importance of Health Systems Education in Healthcare Reform

Although the Malaysian health care system is relatively advanced in the region, there are several serious issues that necessitate a change in healthcare professional education. The issues that the healthcare education system in Malaysia encounters are unique and require local solutions. In the study, Nair and Webster (2012) focus on the education of healthcare professionals in emerging economies and examine the changes in healthcare systems that have occurred because of economic, political, and social changes. The updating and reformation of education should be accompanied by the updating and reform of the curriculum, which requires needs-oriented, whole-school curriculum planning and a modern teaching method. The analysis highlights issues that need to be addressed, including the increasing number of public and private institutions, standardization of accreditation procedures and quality assurance. The recurring problem is to ensure the harmonization of government and private medical institutions in a single country-wide framework of quality assurance and to promote outcome-based education, especially in Malaysia.

Chua and Cheah (2012) examined the framework of the UHC for Malaysia, and they claim that effective governance and leadership, financial resource allocation and quality of health services are essential to sustain equity in UHC. One of the common problems in the Southeast Asian region, including Malaysia, has been the international migration of skilled healthcare workers, which has led to the development of strategies to remunerate skilled workers and diversify skills. The measures in compensation for healthcare workers in Malaysia seek to close the pay gap among public service workers and boost recruitment and retention efforts through measures like the Rakan KKM. Meanwhile, updates on skill mix focus on training and role optimization in the Ministry of Health (MOH) system. Therefore, the healthcare education system has taken up several steps at the basic level to foster and develop Best Practices in healthcare education at the tertiary level, in accordance with the requirements of healthcare workers in Malaysia.

Interprofessional education, task reallocation, and Technical and Vocational Education and Training (TVET) initiatives have been developed and implemented in Malaysia to support the upskilling of economically disadvantaged B40, with an aim of upskilling 300,000 B40 by 2025, under the 12th Malaysia Plan. TVET contributes to improving health-related quality of life and the skills of the workforce to meet the needs of Industry Revolution 4.0. The MOH efforts include upskilling at the community level based on data and embedding a digital health literacy component in the university and college curricula. Thus, the successful implementation of health systems science (HSS) education requires careful curriculum development and significant faculty capacity development, from which Malaysia can benefit from lessons learned from other

countries in the region. A cooperative approach involving cooperation between governmental bodies, public universities and development partners leads to curriculum changes at both national and institutional levels, which Malaysia could follow. The study illustrates the possibility of Malaysia designing educational schemes to reinforce the health systems and meet the health needs of the region by recognizing the competency gaps and developing education programs to fill these gaps**.**

Health Policy and Systems Literacy at the Undergraduate Level

Health policy and systems literacy in undergraduate education in Malaysia is centered on health policy and systems research (HPSR) concepts in medical and health sciences curricula to build an understanding for future health care workers. Health policy and systems literacy is seen as an important competency for undergraduate students in health care; students with this competency know how the health care delivery system works and how policy decisions impact patient care and the outcomes for populations. This literacy is important for the future of other health care professions, not just the clinician's knowledge. Haque et al. (2022) conducted a study among medical students at a public university in Malaysia that asked them about their perceptions of health policy education, finding that 80.9% of respondents were interested in learning more about health policy, and 83.6% felt it should be required for medical education. Students recommended beginning health policy in the early years of medical school so that the building of health policy-related skills could be a gradual process over time. There was a strong association between depth of curricular exposure and depth of health policy involvement, with higher scores being associated with greater involvement in health policy roles. This evidence further emphasizes the critical role of health policy and systems literacy, highlighting its essential contribution to the education of healthcare practitioners in understanding and improving complex healthcare systems.

The development of effective undergraduate curricula for health policy and systems literacy demands intentional pedagogical approaches that are more than just a didactic approach to teaching. Payán (2021) suggested that active learning strategies can help develop policy analysis and communication skills in undergraduate public health. The curriculum comprised individual writing assignments, policy simulation sessions and policy analysis exercises to develop applied skills for students within classroom environments where they could access a variety of institutional resources. Students demonstrated significant improvements in their knowledge (pre-test score of 57%, post-test of 66%, p=0.001), with feedback suggesting a need for teaching on social determinants of health (25%), health systems (25%), policy (17%), and advocacy (15%). This evidence demonstrates that systems-level thinking and policy engagement capacities can be developed and taught in a structured active learning model that is structured. Therefore, incorporating health systems information into clinical programs depends on careful planning and linking to learning and evaluation goals.

Kirkpatrick Model versus Context, Input, Process and Product (CIPP) Model

The most used tools for assessing educational programs in today's higher education are the Kirkpatrick Model and the CIPP Model, representing two philosophies about what it means to measure program effectiveness. The Kirkpatrick Model includes four stages: Reaction, Learning, Behavior, and Results, and offers a linear and simple structure that is highly applicable for evaluating training programs (Alsalamah & Callinan, 2021). It is simple, versatile, and has proven to be useful in various training environments, especially in medicine, computer science, business and social studies. On the other hand, Afriadi and Fitri (2025) provide a detailed analysis of the different models of curriculum evaluation proposed by Daniel Stufflebeam, which span from planning to outcomes, and examine all the aspects of the curriculum evaluation models. The CIPP model emphasizes the notion that there is no single model of evaluation that is best in every situation, but rather that the choice of model should be flexible to the goals of the evaluation, the institutional situation, and the philosophy behind the evaluation. For example, Goel et al. (2026) used the competency-based nursing education (CBNE) model to train senior nursing educators in India and applied the Kirkpatrick model with Kern's 6-step curriculum development model for evaluation. The results showed a significant improvement in the participants in their understanding of adult learning principles, management, and leadership, as well as a high level of satisfaction from the participants.

The CIPP Model has also been useful for evaluating comprehensive healthcare education initiatives, which have many contextual elements and implementation issues that affect the outcomes of initiatives. The evaluation process consists of determining the educational needs via a survey and expert feedback (input evaluation), tracking implementation of the programs (process evaluation), and assessing impact through the use of

baseline data (product evaluation), and then selecting the best program alternatives during the input evaluation phase, monitoring implementation progress during the process evaluation phase, and measuring impact against baseline data during the product evaluation phase.

The Determinants of the Kirkpatrick Model on Healthcare Education

The Kirkpatrick Model primarily assesses reaction, learning, behaviour, and results within the framework of training programmes (Alsalamah & Callinan, 2021). The determinants are: Course material and relevance; Teaching and learning processes; Engagement and participation of the students; Knowledge development and skills; Assessment and feedback. Lastly, it measures students' perception and satisfaction after learning the course. The following:

- Content of the course is the topic that is covered in the syllabus, and each topic should be related to the learning outcome, which is what students will be able to achieve when they have learnt the topic (Faraz et al., 2024). The course provides the students with current clinical skills and evidence-based practices to translate into the real world. The content of the course matches the reaction level as one of the components in Kirkpatrick model, a student's reaction to the topic.
- Teaching and learning comprises the teaching method and delivery of the topic to ensure the knowledge transfer is meaningful and understandable to the students (Khanom et al., 2026). These determinants are in line with ways to involve students and encourage active class participation. It includes several practices like case studies, simulations, problem-based learning, and interactive lectures. The evaluation and assessment are apparent in students' performance/practical activities (Miranda et al., 2025).
- Student engagement and participation are defined as students' involvement in the activities in class alongside the lecturer. In the process of discussion and sharing of knowledge, there is interaction and communication between students and the lecturer with the aim of learning the topic or subject effectively. The determinants are congruent with the reaction level of the Kirkpatrick model. Liu et al. (2025) noted that students' active involvement enhances their engagement in class activities.
- Knowledge and skill development involves assessing the competencies and knowledge that the student has learned after learning the subject. Assessment can be made by creating a test, quiz, practical test, simulation, or presentation that students can use to demonstrate their knowledge of the subject and topic (Liu et al., 2025). The lecturer's assessment can reveal the students' knowledge and skills related to the subject (Faraz et al., 2024).
- Assessment and feedback are lastly employed to measure learning objectives. Measurement can be seen by assessing the gaps in knowledge and skills, which are obtained by re-evaluating students (Fatmawati et al., 2024). Lecturers need to provide timely and constructive feedback which can inform student improvement and students' efforts to adjust to learning. The importance of effective feedback in effective communication between lecturer and student is that students learn and change to become more effective (Miranda et al., 2025).

The overall perception and satisfaction of students with the learning outcomes of the course are based on their experiences and the perceived achievement of learning outcomes (Santoso et al., 2024). This includes satisfaction with the quality, relevance, delivery, and impact of the program on professional development. While student satisfaction at the Reaction level (Level 1) should not be the only indicator of program effectiveness, it is an important factor in influencing student motivation and engagement, which in turn can affect their learning. The component that matters most is linking satisfaction to actual learning outcomes, meaning that when students feel satisfied, it is because they have achieved course objectives and have seen the value of the practical applications (Liu et al., 2025).

3. Research Methodology

Research Design

A cross-sectional survey research design was used to evaluate the attitudes of the students towards the course named National Healthcare Systems (HSM479). This design is appropriate for the study as it captures data related to a participant's perceptions and experiences within a specified time frame (in this case, the time period immediately after the course was finished). This approach is widespread in educational practice to analyze the course design tailored to enhance the learning process and to consider the students' level of

satisfaction and learning outcomes.

Participants and Sampling

The participants of this study were the undergraduate students of the National Healthcare Systems course (HSM479) from Semester 2 at Universiti Teknologi MARA (UiTM). These students have recently completed the course and were selected for their holistic evaluation of the course content, pedagogy, learning outcomes and learning experience as a whole. Convenience sampling of the subjects was used for the study. This sampling method not only guarantees that students attending the class in the semester are available, but also guarantees that all students will be included in the sampling and not just a select few. This sampling method is frequently used in educational research, particularly when the researcher is studying a specific subpopulation of students in a specific course or program. The students were informed that the survey was voluntary, their responses would be kept confidential and their responses would be used only for research and academic purposes.

Data Collection Procedure

Prior to collecting data, a briefing was held by the course instructors. The study objectives, along with the survey and the questions posed in the survey, were explained. Students were also reminded that they had the right not to participate and that they could leave the survey at any time with no academic penalties. An online survey was conducted as data collection immediately after the class ended. This was to allow students time to think about their learning and reflect on the experience in order to provide the most accurate answers to the questions about their perceptions of the course.

Research Instrument

To collect data, the research instrument was a structured questionnaire designed by the course instructors. The questionnaire aimed to evaluate the course and the students' overall learning experience. The evaluation has six sections. These include course content and relevance (assessing how appropriate, clear, and relevant the course material was), teaching and learning approaches (assessing how effective the course teaching approach was), student engagement and participation (assessing how much the students were involved and interacted during the learning), knowledge and skills development (assessing how well the course provided the students with relevant knowledge and skills), evaluation and feedback (assessing how relevant the evaluations and feedback provided by the lecturer are), and the overall impression and satisfaction (assessing the students' perception and satisfaction related to the course learning outcomes). A five-point Likert scale was used, where 1 means Strongly Disagree and 5 means Strongly Agree. A Likert scale is a good choice because it allows respondents to express their level of agreement, and it is widely used in education and social sciences research to understand people's attitudes and perceptions.

Data Analysis

The data have been analyzed using the Statistical Package for the Social Sciences (SPSS) version 29. Both types of statistical techniques were used for the purposes of this study: descriptive and inferential. The mean and the standard deviation were used as statistics to summarize what each of the respondents perceived about each dimension captured by the questionnaire. These statistics summarize a cross-sectional view of the responses of the student body toward the course. Moreover, inferential statistics were used to capture the various relationships that existed among the variables of the study. For course-related variables and overall student satisfaction, Pearson correlation was used to explain the strength and direction of the correlation. In addition, multiple regression was able to find the predictors that were significant to the student's perception and satisfaction of the course. The multiple regression results were used as well to analyze the student's learning experience and satisfaction regarding the National Healthcare Systems course.

4. Research Findings

Descriptive Statistics

During the data collection process, the researchers analyzed the responses to the open-ended feedback forum for each of the six feedback categories. These categories were feedback on the course content and its relevance, feedback on the teaching and learning methods employed, feedback on the student engagement and participation activities, feedback on the knowledge and skills gained, feedback on assessment and feedback to students, and overall feedback on the course for general satisfaction. The researchers received 75 responses to

the survey questions of interest, and the respondent pool consisted primarily of 91% female participants, whereas only 9% of participants were male.

The participants of this study exhibited remarkable positive evaluations of responses across nearly all categories of feedback and achieved a remarkable average feedback assessment rating of between 4.46 and 4.57 on a 5-point Likert scale. The assessment and feedback constructs, as well as general satisfaction, achieved the highest average feedback assessment rating accompanied by a mean rating of 4.57 and a standard deviation of .602 for assessment and feedback and .611 for general satisfaction, indicating high satisfaction with the course and the evaluations. Therefore, it can be said that the methods of assessment used in this course, HSM479, were effective in helping the students understand and apply the course content.

Once again, course content earned a high mean score (M = 4.55, SD = 0.636), showing that a mean score> 4.5 indicates a high student perception that course content is relevant, comprehensive and aligned with their academic needs. Teaching methods (M = 4.53, SD = 0.613) and knowledge and skills development (M = 4.49, SD = 0.611) also received good mean scores, which show that a great number of students appreciated the practical skills and knowledge development. Among the various factors, the mean score (M = 4.46, SD = 0.643) received by student engagement was the lowest, which still indicates a high agreement on engagement. This means students were engaged during the course and in future iterations of the course, there will be opportunities for further interactive participation and collaboration.

Skewness and Kurtosis: Assessing Normality

As part of the preliminary analysis, descriptive statistics, more specifically, skewness and kurtosis, were used to check whether each of the variables follows a normal distribution, since a normal distribution is needed to perform inferential statistics for the analyses, in particular, for multiple regression analysis, which, for this analysis, involves calculating a skewness value. For example, student engagement had a skewness value of -1.430 and course content had a skewness value of -2.276, both indicating a moderate to high negative skew, which implies that student responses were likely highly clustered, meaning a substantial number of students likely chose diploma and/or were likely to respond as high as, or, the highest on the Likert scale. In general, regression estimates are less likely to be influenced by sample skewness, and for this analysis, with a statistical sample size of n = 75, the distribution is 97% and meets all requirements for parametric testing; for skewness, with sample size = 75, it is ballparked by Hair et al. (2021) with a sample size of 75.

Kurtosis values between \textit{student engagement} and \textit{course content} show values between 2.986 and 8.574. This shows that all engagement responses are highly peaked and concentrated around the mean. Since responses provided by the students were of high quantity, this gives the distribution a negative skew. Extreme kurtosis might affect the standard errors and confidence intervals of regression models. However, given the sample size and the more advanced statistical methods used in their study, Field (2022) and Tabachnick and Fidell (2021), justify the presence of extreme kurtosis in social science research.

Table 1: Descriptive Statistics of HSM479 Course Constructs (N = 75)

Construct	Mean	SD	Skewness	Std. Error	Kurtosis	Std. Error
Course Content & Relevance	4.55	0.636	-2.276	0.277	8.574	0.548
Teaching & Learning Methods	4.53	0.613	-1.824	0.277	4.534	0.548
Student Engagement & Participation	4.46	0.643	-1.430	0.277	2.986	0.548
Knowledge & Skills Development	4.49	0.611	-1.655	0.277	4.455	0.548
Assessments & Feedback	4.57	0.602	-1.673	0.277	3.626	0.548
Overall Satisfaction	4.57	0.611	-2.237	0.277	7.766	0.548

Note: N = number of respondents; Std. Deviation = standard deviation; Skewness and Kurtosis values indicate the shape of the distribution for normality assessment.

Correlation Analysis

The results of the Pearson correlation of the course components, pedagogy, student engagement, enhancement of knowing and doing, evaluation and response, and general satisfaction in the subject HSM479 National Healthcare Systems are shown in Table 2.

All aspects of the course showed significant positive correlations, all at the 0.01 level (2-tailed). Teaching styles and course content ($r=0.930$, $p<0.001$), enhancement of knowledge and skills ($r=0.895$, $p<0.001$), assessment and feedback ($r=0.923$, $p<0.001$), course content, and overall satisfaction ($r=0.923$, $p<0.001$) all show high positive correlations. This means that the evaluations of teaching styles, skill enhancement, assessment, and overall satisfaction are most likely the same as the evaluations of course content. The method of teaching has also shown high positive correlations with student engagement ($r = 0.874$, $p < 0.001$), knowledge and skills development ($r = 0.897$, $p < 0.001$), evaluation ($r = 0.930$, $p < 0.001$), and overall satisfaction ($r = 0.914$, $p < 0.001$). This illustrates that the course teaching styles designed can nurture both student engagement and the perceived academic success of the students. There is sufficient student involvement, academically, when there is strong student involvement and academic success ($r = 0.885$, $p < 0.001$), evaluation ($r = 0.902$, $p < 0.001$), and overall satisfaction ($r = 0.885$, $p < 0.001$). This illustrates that for students to achieve academic success, they need to be engaged.

Additionally, enhancement of knowledge and skills was also positively correlated with assessment ($r = 0.889$, $p < 0.001$) and overall satisfaction ($r = 0.893$, $p < 0.001$), reinforcing the notion that students value the opportunity to enhance and feel capable of utilizing the knowledge. Finally, evaluation and overall satisfaction have the strongest correlation with each other ($r = 0.954$, $p < 0.001$), indicating that the evaluation processes used in the course correspond well to the students' positive outlook and satisfaction.

The results deepen our understanding of how course content, teaching style and methods, student engagement, knowledge and skills development, and student assessments interrelate to shape students' overall satisfaction with the course. Correlation studies, especially with assessments and overall satisfaction, reinforce studies that say students need to see real learning outcomes coupled with the development of good practical skills as a result of the course content and teaching activities (Becker & Gould, 2023; Garfield & Ben-Zvi, 2021).

Table 2: Pearson Correlations among HSM479 Course Constructs (N = 75)

Construct	1	2	3	4	5	6
Course Content & Relevance	1	.930**	.857**	.895**	.923**	.923**
Teaching & Learning Methods	.930**	1	.874**	.897**	.930**	.914**
Student Engagement & Participation	.857**	.874**	1	.885**	.902**	.885**
Knowledge & Skills Development	.895**	.897**	.885**	1	.889**	.893**
Assessments & Feedback	.923**	.930**	.902**	.889**	1	.954**
Overall Satisfaction	.923**	.914**	.885**	.893**	.954**	1

Regression Analysis: Predictors of Student Satisfaction

To see how certain variables affect student satisfaction, multiple regression analyses were conducted to measure the effects of five influencing variables. The variables are course content, teaching methods, student engagement, knowledge and skills development, and assessment. The model summary is displayed in Table 3. Regression modelling is a statistically significant way to measure student satisfaction, and when explaining the variance, the model is a good fit, $F(5, 75) = 173.695$, $p < .001$. A strong relationship is evident in the model, and a value of .962 indicates strong predictive power for student satisfaction. A value of 92.6% is explained by five increasing student satisfaction variables, and a value of .926 is in variance. A value of 921 represents the model's Adjusted R value, which is highly informative. The average value of the 0.172 observed scores standard deviation and the predicted scores standard deviation was calculated to measure the average observed deviation, and the standard error of the estimate is very small.

As shown in Table 3, the regression coefficients correspond to the predictors, in particular, the enhancement of knowledge and skills, student engagement, and assessments, which are the main predictors of student

satisfaction. The model has a large R^2, indicating that the course components (content, teaching methodologies, student engagement, skills development, and assessment) assist in clarifying the student satisfaction phenomenon in the HSM479 course.

Table 3: Results of Multiple Regression Analysis Predicting Student Satisfaction (N = 75)

Predictor Variables	B	SE B	Beta	t	p
(Constant)	0.074	0.156	—	0.475	0.636
Course Content & Relevance	0.212	0.098	0.220	2.154	0.035*
Teaching & Learning Methods	0.004	0.107	0.004	0.038	0.970
Student Engagement & Participation	0.049	0.079	0.052	0.619	0.538
Knowledge & Skills Development	0.114	0.088	0.114	1.298	0.199
Assessments & Feedback	0.609	0.112	0.600	5.444	<0.001*
R	0.962				
R^2	0.926				
Adjusted R^2	0.921				
F Change	173.695				
Sig. F Change	0.000				
Durbin Watson	1.908				

Note: Dependent variable: Overall Satisfaction. *p < 0.05.

Of the five predictors analyzed, assessments & feedback (B = 0.609, β = 0.600, t = 5.444, p < 0.001) and course content & relevance (B = 0.212, β = 0.220, t = 2.154, p = 0.035) were positive and significant predictors. This indicates that well-structured assessments and relevant course content positively impact students' satisfaction. Specifically, keeping other variables constant, the satisfaction score is expected to increase by 0.609 units for each unit increase in assessment quality perceived by students. Content of the course also led to a significant (yet smaller) increase in satisfaction (B = 0.212). Teaching and learning strategies (B = 0.004, β = 0.004, t = 0.038, p = 0.970), engagement and participation (B = 0.049, β = 0.052, t = 0.619, p = 0.538), and knowledge and skills development (B = 0.114, β = 0.114, t = 1.298, p = 0.199) were not posed as predictors of students' satisfaction. These factors were positively correlated with satisfaction in the descriptive analysis; however, when controlling for other factors in the model, their individual contributions remained small. This could happen as a result of the predictors sharing variance, which was reflected in the correlational analysis, where predictor pairs had high averages (r > 0.85 in most factors described), which captures the essence of multicollinearity.

The Beta coefficients (standardized) show the order of significance of the elements in the model. Assessments had the most influence (β = 0.600), followed by course content (β = 0.220), confirming that these two factors had the most influence on the students' overall satisfaction. Other factors in the model were unimportant. Students' dissatisfaction with teaching, student engagement, and the skills students perceive they have developed were not as pertinent as the assessment practices and learning outcomes, with respect to the HSM479 courses. This is in line with the existing research and literature which emphasizes the role of good assessments and relevant information on student satisfaction in higher education (Becker & Gould, 2023; Garfield & Ben-Zvi, 2021).

5. Discussions, Conclusions and Implications

The study looked at the factors affecting students' perceptions of the National Healthcare Systems course using multiple regression analysis. Overall, the model had statistically significant results and explained almost all the variance in students' perceptions (R^2 = 0.926). This means that the five predictor variables- course content and relevance, teaching and learning methods, student engagement and participation, knowledge and skills development, and assessments and feedback- are the most important in shaping students' perceptions of the course. With a high adjusted R^2 value (0.921), it suggests that the model is accurate and valid after factoring in

the number of predictors used in the study. With a Durbin-Watson value of 1.908, the assumption of independence of errors is met, underlying the credibility and appropriateness of the regression analysis.

Course content and relevance, along with assessments and feedback, most impact students' perceptions of the course. Teaching and learning methods, student engagement, knowledge and skill development, and participation did not have the same statistically significant impact. This shows which areas of course design students in healthcare education value the most. One result of this study is the impact that course content and relevance have on how students view the National Healthcare Systems course. Students feel more positively about the course when they feel the content is relevant and meaningful to real-world healthcare problems. Prior studies in higher education show that curriculum relevance and value impact students' learning experiences. Research shows that, especially in technology-enhanced courses, the value and relevance of course content impact students' perceived value of the course (Ucha, 2023).

In healthcare education, relevance and quality of course content are of utmost importance, as students are anticipating very specific professional roles that require comprehension of the healthcare system, the policies, and healthcare service delivery. The closer course content is to the students' intended field of practice and the policies that govern it, the more valid and important students consider that course to be in their professional preparation. Research shows that students' academic motivation is strongest when real-world problems, demands, and challenges are addressed in the curriculum (Jamaludin et al., 2024). Also, course relevance and importance further stress the vital role of curriculum alignment in post-secondary education. The National Healthcare Systems course, for example, is likely to improve student comprehension when it involves case studies, policy frameworks, and real-world healthcare systems. The same goes for discussions on healthcare reforms and systems of health financing and global health. The relevance of course content and professional practice integration focuses on the need for students in healthcare programs to operate at an advanced level of both conceptual and practical integration around health systems.

Another vital result from this study is that among all predictors of the student's perception of the course, assessments and feedback had the most positive outcome. The standardized beta value ($\beta = 0.600$) demonstrates that this variable is the most influential one. This means that the way students learn through assessments and the amount and quality of feedback that instructors provide are the most influential variables affecting students' perception of their learning experience. The value of feedback and assessment has been well established in the field of education. Constructive feedback shows students exactly how they are doing, what they need to do to improve, and what they need to do to develop their skills further. Many researchers have found that feedback that has been well implemented improves student performance through feedback that is specific (Weidlich et al., 2025). Feedback is also essential in formative assessment that allows students to learn continuously and improve. Students are able to change their performance and learning strategies when teachers provide feedback promptly (formative assessment). Many researchers have found that feedback enhances students' self-regulation and motivation (Pereira et al., 2016).

In the National Healthcare Systems course, the theory of assessments that work includes analysis of case studies, group work, presentations, and assessments of health care policies which will help students better understand the theory and apply it to the health care system. These types of assessments gauge use of the course content, but equally foster the development of the students' critical and analytical thinking skills. Along with assessment type of feedback, students will see more value in the course and the course is more likely to help students with their academic goals. The influence assessments and feedback have is evident in the effort being made to implement self-directed learning in adult education. Within the self-directed learning paradigm, feedback is important to assist students within the learning process and to engage them actively in the material. The provision of thoughtful feedback likely contributes to a more comprehensive understanding of the complex policies and systems that comprise the health care system (Carless & Winstone, 2023).

Unlike the other important predictors found in the study, teaching and learning methods did not seem to influence students' views of the course in any substantial way. This finding might seem odd; teaching style is often regarded as a crucial factor of the learning process. There are a number of other explanations for this finding. First, students may have a course-specific expectation in mind when teaching methods are used, resulting in a lack of variation in the response. When other teaching approaches are viewed as sufficient, the

teaching style used in the course may not appear as a crucial factor in students' assessment of the course. Furthermore, students may seem to focus on concrete course components, such as grading and relevance of the course content, rather than the teaching methods.

Students in classes that require extensive theoretical understanding, like health care systems, could concentrate on content accuracy and usefulness as opposed to delivery style. Touching upon theory, as long as the delivery method covers all aspects of the teaching content, it might not be the most important element of the course for the students. Correspondingly, the measure of students' engagement and participation showed no significance in the students' perception of the course. Although student engagement and participation are valued components of productive learning, the absence of significance in the current case might be due to uniformly low participation levels across the board. Alternatively, engagement could influence the participants' perception of the course content through course objectives or evaluation methods. If course objectives, learning content, and assessment methods are aligned, students are likely to show a heightened level of engagement in the learning process. In this case, student engagement is an intervening variable influencing the participants' perception of the course content. The variable course content relating to knowledge and skills growth was not found to influence participants' perception of the course.

This possibly shows that students struggle to see the course's value to their knowledge and skills. An example of this is when students take what they learn from the course and use it during an internship. What students do and don't learn during an internship is true for healthcare education when we examine students' analytical and policy-related skills, they learn them gradually. Thus, at the moment when students take an evaluation of the course, they will not value the skills and knowledge they will learn, and will use factors that are more related to the here and now, such as the assessments and content of the course.

The findings of this study highlight the importance of the careful design of the course and the assessment strategies used to influence students' perceptions of the National Healthcare Systems course. As the findings show, the course instructors need to include current and applicable literature and provide frameworks and challenges to the healthcare system and policies. Aside from understanding the context of the healthcare system, the course assessments and measurement strategies need to be devised to enable the students to undertake higher-order thinking and respond to the feedback provided in a meaningful way. These results are also valuable from the standpoint of healthcare curriculum design. It is critical for universities to ensure that the contents of the course are periodically brought up to date to reflect the current healthcare issues. Part of the contents of the course should include current case studies, issues under discussion in healthcare policies, and variations in the healthcare system at the international level. Moreover, universities should ensure that the course instructors are supported in terms of the assessment and feedback methodologies they utilize. Workshops and training initiatives can be undertaken to empower instructors in generating constructive remarks and, to a great extent, to design assessments that can enhance the intention of the feedback. These make up the elements of effective teaching for learning that can enhance the effectiveness of the learning environment and the elements.

This study adds to understanding student perceptions in higher education by pinpointing what is important in students' evaluations of the National Healthcare Systems course. The data suggest that feedback, course content and relevance assess students' perceptions, with feedback being the most powerful predictor. These findings emphasize what is important in assessment and curriculum relevance for students' learning experience. The importance of assessment and curriculum relevance can be a stepping stone for future research and, assessment and curriculum relevance can be utilized in future research to understand student perceptions and academic outcomes in healthcare education, as influenced by teaching and learning, to understand more of student perceptions and academic outcomes in healthcare education.

Adaptation of MOOC in Teaching and Learning for Content Development in a National Healthcare Systems Course

Due to the fast-growing digital learning technologies, the higher education sector has started to include Massive Open Online Courses (MOOCs) in their teaching methodologies. MOOCs provide learning opportunities in a flexible, accessible, and scalable manner. This allows both the instructor and students to improve their learning experience. Regarding the education of healthcare professionals, MOOCs can be a game changer for both the

development and delivery of educational materials. This is especially beneficial for the National Healthcare Systems course, which requires students to grasp complicated policies, governance, and models of health care delivery.

Instructor-led MOOCs with a clear curriculum, supplemented by a variety of tools including videos, reading materials, quizzes, and forums, allow for full engagement of participants, as educators offer multiple channels for delivering educational materials. In comparison with courses designed for instructing participants using passively received instruction through lectures, MOOCs provide educators the opportunity to restructure the material to offer variety and engage participants at a more sophisticated level. In relation to a specific course, educators can combine a multitude of different formats, including policies, case studies, and comparative analysis of health systems, and, using MOOCs, educators can offer modular health financing, health system governance, and service delivery teaching units. This approach creates opportunities for the development of specific healthcare systems models and allows participants to progress at their own pace (Zhu et al., 2018). MOOCs are also highly valuable in the development of course content due to the use of multimedia and resources (including tools) designed for active engagement. The use of passively received instructional lectures and accompanying written materials tends to limit the level of engagement and understanding the participants have of complicated issues. In contrast to such a model, MOOC programmers are allowed to utilize and integrate videos, simulations, and real-world case studies in a variety of formats and cases. This approach also enhances the development of instructional materials (or resources) and subsequently the participants' educational experience.

Video-based case studies, for example, put into perspective the implementation of policies in healthcare and the framework of various countries' healthcare systems. It helps students grasp the ways theory is operationalized. In the case of collaterals, it is recorded that the use of a multimedia learning environment considerably increases the students' comprehension and knowledge retention in the context of higher education (Hew & Cheung, 2023).

Collectively, MOOCs also help educators bring different perspectives when educating students in the field of health care. Because MOOCs are usually created by top-tier universities and global organizations, the content and resources usually cover the different practices and policies of the global health care system. When educators use these resources, they assist students in learning about the different health care systems in various countries. This makes students understand health care policy better and helps them think about the different models of health care systems and the problems and advantages they can bring. This knowledge is necessary for public health and health care management students, as it helps them better understand the health care system around the world (Jordan et al., 2022). MOOCs also provide educators the ability to modify the content of the courses they create to help them keep up with the changes in the health care system. The health care system changes frequently due to social and demographic shifts, new technology, and changing public health needs. MOOCs enable educators to alter the content of their courses by adding new videos, readings, and discussions so that students receive relevant and timely information about the changes that are taking place in the health care system (both globally and nationally). This also ensures students are aware of changes in policies and trends.

Additionally, MOOCs are a great way to promote self-directed learning, an essential skill in higher education. In learning environments based on MOOCs, students are able to access learning materials, participate in online learning communities, and submit assessments at their own pace. Because learning in such an environment is based on the individual learner's activities, it is a great way to promote individual initiative and responsibility. Such an approach to learning helps students develop essential critical thinking and problem-solving skills, especially in the healthcare field. Research shows that increased flexibility and access to learning resources improve the motivation and engagement of learners in MOOC-based learning environments (Zawacki-Richter et al., 2023). Despite the value of a well-designed MOOC, incorporating MOOCs in a National Healthcare Systems course requires intentional course planning and design. To effectively integrate a MOOC, the instructor's role is to ensure that the MOOC activities match the learning objectives for the course and to integrate support, scaffolding, and guidance to assist learners in navigating the online resources. With the right planning, educators can use MOOCs to enhance the variety of learning materials, and help learners to grasp the nuances of complex healthcare systems.

To wrap it up, it seems like there's a lot to gain from using MOOC's for developing and teaching a National Healthcare Systems course. MOOCs offer a variety of ways to present and teach the various aspects of Healthcare Systems and policies, as well as the digital skills to teach them. The various elements offered by MOOCs like videos, podcasts, articles, and global collaborations (to name a few) allow for a more thorough exercise of their National Healthcare Systems and policies digital skills as well as an exercise in critical thinking as they analyze the various aspects of a Healthcare System. It is anticipated that incorporating MOOCs into National Healthcare course systems teaching and learning would improve students' knowledge and understanding of the engaged digital learning the National Healthcare Systems course inspires, and offer a broad area for further research.

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