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Perceptions of Graduate Attribute Acquisition among Physiotherapy Undergraduates at the Maldives National University

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ABSTRACT *As students increasingly take responsibility for their own development, graduate attributes have become more prominent in higher education. However, research often overlooks students' perspectives. This study examines how undergraduate physiotherapy students at the Maldives National University (MNU) perceive, understand, and acquire GA(s), with a focus on lifelong learning and professionalism. The study employs a mixed-methods approach to investigate undergraduate students' perceptions of graduate attributes, focusing on their understanding, perceived importance, and processes of acquisition within higher education. A total of 16 participants completed the quantitative survey, and five took part in a focus group discussion. The mean age was 24.75 ±5.6 years, with 75% female participants. The discussions were recorded and transcribed. The quantitative data was analysed using descriptive statistics, while qualitative data was thematically analysed. Descriptive data analysis revealed that 56.3% (n=9) participants were not familiar with the graduate attributes while 25% (n=4) reported they were aware of it, and 18.8% (n=3) answered that they were not sure whether they knew about it. Through iterative coding and thematic categorisation, emergent themes highlighted the importance of attributes such as critical thinking, communication, teamwork, adaptability, and ethical decision-making. Furthermore, the thematic analysis identified factors that shape the development of graduate attributes. In conclusion, this research contributes to the ongoing discourse on enhancing undergraduate education by presenting crucial perspectives from students as the primary stakeholders. Educators and policymakers need to understand students' perspectives and experiences with graduate attributes to better prepare students for their future roles as professionals, leaders, and citizens in a dynamic world. This understanding can guide the design of interventions and programs that foster holistic development.*

Keywords: Graduate Attributes, Communication Skills, Life-Long Learning, Physiotherapy, Pedagogical Practice

Introduction

Universities worldwide have seen a transformation in recent years, shifting from solely educational establishments to actively fostering students who not only possess academic excellence, but a strong sense of social responsibility, and the ability to contribute effectively to society (Wong et al., 2022). This shift has driven a dynamic evolution in how curricula are designed and implemented, emphasising interdisciplinary learning, practical skill development, and real-world applications. Universities are increasingly incorporating experiential learning, collaborative projects, and community engagement to prepare students for complex societal challenges. As a result, modern curricula now prioritise academic rigour, critical

thinking, adaptability, and the ability to work effectively in diverse professional environments (Ye & Xu, 2023).

This transformation is further shaped by external factors such as the increasing diversity of student populations and the growing pressure from governments and the commercial sector to produce employable graduates (Leggett et al., 2007). As a result, higher education institutes face growing pressure from governments and other sectors to produce skilled professionals and graduates who can find employment (Humburg, 2013; Wong et al., 2022). Moreover, these evolving academic frameworks highlight the importance of lifelong learning, adaptability to technological advancements, and a commitment to ethical and sustainable professional practices. Higher Education Institutions (HEIs), in fostering a holistic educational approach, face the challenge of equipping students with the necessary tools to navigate an increasingly complex and interconnected world.

These evolving demands have driven the development of structured graduate attributes (GA) frameworks, such as charters and policies, to ensure that curricula are focused on facilitating students' acquisition of the necessary skills and competencies for professional and societal engagement. Consequently, HEIs are placing greater emphasis on cultivating essential abilities and attributes that empower graduates to actively contribute to society. By fostering critical thinking, ethical responsibility, and a commitment to lifelong learning, HEIs aim to prepare students to make meaningful and lasting contributions to their communities (Barrie, 2004, 2006; Wong et al., 2022).

In the context of this change the primary goal of any professional academic curriculum has focused on equipping students with the skills and knowledge necessary for their chosen careers after graduation. However, the scholarly discourse on graduate attributes often overlook students' perspectives, focusing instead on definitions and understandings from educational institutions, government, and industry (Leggett et al., 2007; Lygo-Baker et al., 2019). While these external perspectives are valuable in shaping graduate competencies, there remains a critical gap in understanding how students themselves perceive and experience the development of these attributes throughout their academic journey.

In the context of the Maldives, the Maldives National University (MNU) is a publicly fun ded university, offering a diverse range of courses. MNU has developed a graduate attribute policy, outlining the attributes they aim to instil in their graduating students (Maldives National University, 2022). However, the extent to which students acquire these attributes depends significantly on the learning experiences embedded within their curricula. This raises an essential question: What specific learning experiences contribute most effectively to the development of graduate attributes?

To ensure that graduate attributes are not just theoretical ideals but are genuinely cultivated through higher education, it is imperative to investigate the pedagogical approaches, assessment strategies, and extracurricular opportunities that facilitate their development. Active learning methodologies, experiential learning, interdisciplinary collaboration, and reflective practices may all play critical roles in shaping students' competencies. Therefore, understanding students lived experiences—how they engage with their curriculum, the challenges they

face, and the support they receive—is essential in refining educational policies and practices. HEIs risk implementing policies that do not translate into meaningful skill development without such insights, ultimately affecting graduate employability and societal contribution.

This highlights the need for empirical research that explores the direct link between learning experiences and graduate attribute acquisition. By incorporating student voices and experiences into curriculum design, universities can create more effective and engaging educational environments that align with industry and societal needs and foster well-rounded, competent, and adaptable graduates. This research explores GA from students' perspectives, giving them a voice in the discourse. Accordingly, this study aims to investigate how students perceive the development of graduate traits and whether they believe these attributes have been acquired through their academic experiences.

Study Context

The primary focus of this study is the students enrolled in the Bachelor of Physiotherapy (BPHT) programme offered by the Faculty of Health Sciences (FHS) at the Maldives National University (MNU). The BPHT program at MNU represents a significant milestone in healthcare education in the Maldives, serving as the nation's premier entry-level physiotherapy education program. Established to meet the growing demand for qualified physiotherapists in the country.

Physiotherapist education is a continuum of learning that integrates theory, evidence, and experiential practice and continues throughout professional life. The process of becoming a physiotherapist begins with completing an entry-level education program, followed by establishing and maintaining competency in practice (World Physiotherapy, 2021). Given the evolving demands of healthcare, physiotherapy education must continuously adapt to incorporate emerging technologies, evidence-based practices, and competency-driven assessments. Understanding how students perceive and develop graduate attributes within this context is crucial for refining educational strategies and ensuring that graduates are well-prepared for the dynamic nature of the profession (Barradell, 2017).

The BPHT is a four-year education programme spread over eight semesters. The programme's first year focuses on medical subjects (anatomy, physiology, and biomechanics) and soft skill subjects (communication in health & Dhivehi for p rofessionals). Years 2 and 3 are predominantly physiotherapy-based with components of clinical practice. The fourth (final year) of the programme focuses on clinical practice, consisting of rotatory clinical internship in Musculoskeletal physiotherapy, Paediatric physiotherapy, Neurological physiotherapy, Cardiorespiratory physiotherapy, Sports physiotherapy, Geriatric physiotherapy, and Community physiotherapy.

The rotatory clinical internship is a significant component of the BPHT programme providing students with hands-on experience across diverse clinical settings. It enables them to apply their theoretical knowledge and practical skills while working alongside experienced physiotherapists who can provide guidance and mentorship, fostering the development of their professional competencies as they transition into the workforce. The different components of the clinical

internship are assessed by clinical supervisors and hospital educators throughout the placement. The programme equips the graduates with skills to assess, prevent, evaluate, identify, and treat human movement problems using various assessment tools and therapeutic interventions.

As students are being asked to take on more responsibility for their growth and development, the discourse around graduate attributes has increased, with more research focusing on it. However, in most research, students are not part of the process . They must be included in the conversation to improve their understanding of the GA.

Previous research has highlighted the importance of developing of generic graduate attributes which have also been highlighted among physiotherapy graduates (Stewart et al., 2016). Developing these attributes in physiotherapy students helps enhance their employability and career readiness. Furthermore, my interaction with students over the last eight years has made it evident that students do not fully understand the term graduate attributes. While acknowledging the importance of "soft" skills like communication and critical thinking, students do not correlate them to GA. This reveals discrepancies between how students conceptualise GAs and how the institution articulates them. Secondly, we do not understand how students learn these attributes and what shapes the development of it. The current research will enhance the comprehension of GA by examining it from students' viewpoints. Therefore, the overarching aim of the study was to gain deeper insights into how students understand graduate attributes and how competent they believe they are in the attributes mentioned in MNU graduate policy.

Graduate Attributes in the Context of the Maldives National University

Graduate attributes represent the essential competencies, qualities, and dispositions students must develop throughout their higher education journey. These attributes extend beyond disciplinary knowledge, shaping graduates into well-rounded professionals who can effectively contribute to their respective fields and society. The Maldives National University (MNU) has established a structured framework of graduate attributes that define the characteristics and competencies expected of its graduates. These attributes are embedded within the university's curriculum, co-curricular activities, and institutional ethos, ensuring students develop skills that prepare them for professional success and civic responsibility.

MNU's Graduate Attributes Policy (Maldives National University, 2022) outlines four key domains that shape the development of its students: Professionalism, Global Citizenship, Lifelong Learning, and Honouring the Maldivian Identity. These attributes serve as guiding principles in curriculum design and student learning experiences, reinforcing the broader vision of MNU in fostering competent, ethical, and adaptable graduates. Understanding these attributes is crucial to examining how students perceive their learning experiences and whether they believe they have successfully acquired these competencies.

1. Professionalism: A central goal of higher education is to prepare students for their future careers by instilling professionalism. MNU graduates are expected to be self-directed, ethical, and capable of innovatively applying their knowledge and skills in professional settings. Professional competence includes disciplinary

expertise, critical thinking, communication skills, ethical integrity, and teamwork. Additionally, graduates are encouraged to demonstrate entrepreneurial leadership, digital literacy, and strong organisational skills, enabling them to navigate complex work environments effectively. This attribute aligns closely with employability, highlighting the importance of real-world problem-solving and collaboration within multi-disciplinary teams.

2. Global Citizenship: Higher education institutions are critical in shaping students into responsible global citizens who can operate in diverse, multicultural environments. MNU emphasises cultural awareness, ethical responsibility, and sustainability, ensuring that graduates are skilled professionals and individuals who contribute positively to a globalised world. Graduates are expected to respect cultural diversity, communicate effectively across social and professional settings, and engage in practices that promote social justice, environmental sustainability, and economic stability. These competencies are particularly important as the Maldives continue integrating into the global economy and face challenges such as climate change and socio-economic development.

3. Lifelong Learning: The ability to continuously learn and adapt is essential in an era of rapid technological and professional advancements. MNU graduates are encouraged to be self-reflective, resilient, and adaptable, ensuring that they can engage in lifelong learning and professional development. The university promotes a culture of self-awareness, intellectual curiosity, and agility, enabling graduates to embrace new ideas, technological advancements, and evolving industry standards. The emphasis on lifelong learning also fosters collaborative inquiry, constructive feedback, and personal well-being, ensuring that graduates maintain both professional excellence and holistic well-being throughout their careers.

4. Honouring the Maldivian Identity: A unique component of MNU's graduate attributes framework is its emphasis on the Maldivian identity, ensuring that graduates remain connected to their cultural roots while contributing to national development. This attribute reinforces the significance of Islamic values, local history, language, and traditions, fostering a sense of national unity and responsibility. Graduates are expected to engage with local communities ethically and respectfully, using their skills and knowledge to address societal needs. This attribute highlights the intersection of cultural preservation and professional practice, encouraging students to develop solutions that support both economic and cultural growth in the Maldives.

Given the importance of these attributes, this study aims to explore students' perceptions of their development and assess whether they believe they have successfully acquired these competencies. By examining student experiences, learning environments, and curriculum design, this research seeks to identify the factors that contribute to or hinder the development of graduate attributes. A deeper understanding of these elements will provide valuable insights into the effectiveness of current educational strategies in cultivating professionalism, global citizenship, and lifelong learning among physiotherapy students.

Furthermore, this research aims to offer valuable insights that could inform future enhancements to the program structure, teaching approaches, and assessment methods at MNU. By analysing student perceptions, the study can

highlight key areas for improvement, ensuring that physiotherapy graduates develop the critical professional attributes necessary for their field. Strengthening these attributes will not only enhance graduate employability but also contribute to improving healthcare delivery throughout the Maldives, reinforcing the role of physiotherapy in addressing national healthcare challenges.

Methodology

Research Design

The research uses a mixed-methods approach to evaluate students' perceptions of their level of competency in graduate attributes. The quantitative research approach entails the systematic gathering and examination of numerical data. It can identify trends and mean values, generate predictions, establish causal connections, and extrapolate findings to broader populations (Creswell & Creswell, 2023). Specifically, a cross-sectional online survey, administered via Google Forms, was used to identify students' perceptions of their competencies in graduate attributes. Focus group interviews are used to gather data from a limited number of participants who share shared interests related to a particular subject (Krueger & Casey, 2015). The FGD provided a richer understanding of student's perceptions and complemented the quantitative findings.

Participants

Students enrolled in the Bachelor of Physiotherapy course in MNU who were in semesters 6 and 8 were recruited for this study. All the students enrolled were invited for the survey. For focus group discussions, purposive sampling was used as it allows the researcher to intentionally select individuals who have specific characteristics, knowledge, or experiences relevant to the study's objectives.

Data collection tools

A survey questionnaire was developed based on the MNU graduate policy (Maldives National University, 2022). Two graduate attributes were selected for this project: MNU graduates are professionals, and MNU graduates are lifelong learners. The questionnaire consists of three different sections. The first section provided basic information and a consent form, requiring respondents to consent before proceeding to subsequent sections. The second section consisted of questions about the participants' demographic details. In the final section, the respondents were asked to rate their competency level for each graduate attribute statement on a Likert scale from 1 to 5; 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree. Additionally, the questionnaire included two open-ended questions: "In your own words, how would you describe graduate attributes?" and "Why do you think graduate attributes are important?" For the FGD an interview guide was utilised to facilitate the discussion, ensuring consistency and relevance to the study's objectives. The session was audio-recorded with participants' consent and later transcribed verbatim to preserve the authenticity and depth of the responses.

Ethical Considerations

Participants provided informed consent prior to the survey and FGD. Additional permission was obtained to audio-record the discussion. Participants were assured

that their identities would remain confidential and that all information would be handled anonymously. At the start of the FGD, participants chose a pseudonym to be used throughout the study. They were also informed that they could withdraw from the study at any time without penalty. The study adhered to the ethical principles outline in the World Medical Association (WMA) Declaration of Helsinki.

Data Analysis

The survey data was first exported to Microsoft Excel for initial cleaning and organisation. This process involved checking for missing values, inconsistencies, and outliers to ensure the accuracy and integrity of the dataset. Any errors identified were addressed before proceeding with the analysis. Once the data was cleaned, it was then imported into JAMOVI Cloud and analysed.

The qualitative data collected through the focus group discussion (FGD) was analysed using inductive thematic analysis, a widely accepted approach for identifying, analysing, and interpreting patterns within data (Terry & Hayfield, 2021). The analysis followed a systematic and iterative process, as illustrated in Figure 1. This structured process ensured that the data were examined systematically and rigorously, resulting in credible and insightful findings that contribute to understanding how students perceive and develop graduate attributes.

Techniques to Enhance Trustworthiness in Data Analysis

To enhance the trustworthiness of the qualitative data analysis, multiple strategies were employed throughout the research process. The rationale for employing these trustworthiness techniques lies in their ability to increase credibility, dependability, confirmability, and transferability of qualitative findings (Ahmed, 2024).

Member Checking: After transcription and initial theme identification, participants were invited to review their responses to ensure accuracy. This allowed them to confirm whether their perspectives were represented correctly and provided an opportunity to clarify or elaborate on their statements. Any discrepancies identified by participants were addressed, and modifications were made to refine the analysis.

Audit Trail: A structured documentation process was maintained to ensure transparency in data analysis. This included detailed records of coding decisions, theme development, and researcher reflections. Notes were kept at each stage of the analysis, ensuring that the decision-making process could be traced and justified.

Triangulation: To increase the credibility of findings, data from multiple sources were compared. Survey results were cross-checked with focus group discussions to identify consistencies and variations in responses

By incorporating these methodological safeguards, this study ensures that the data analysis process remains rigorous, systematic, and reflective of participants' genuine experiences, ultimately contributing to a more valid and reliable body of knowledge in the field of graduate attributes and student perceptions.

Figure 1. Steps Involved in thematic analysis

Results

Quantitative Results

The survey was sent to all 20 students from from two batches of BPHT (a third year batch and a final/fourth year batch),out of which 16 responded. The response rate for the survey was 80%, which is acceptable for e-surveys (Nulty, 2008). The mean age of the respondents was 24.75 ± 5.6 (range: 22- 45 years)., with most respondents being females (75%).

Additionally, demographic data revealed that most respondents were female (75%), highlighting a gender disparity commonly observed in healthcare-related education programs. This trend aligns with global patterns in physiotherapy and allied health education, where female students often constitute a larger proportion of enrolment   (Coghlan et al., 2017). Furthermore, the distribution of students across semesters showed that 62.5% were in the 6th semester and 37.5% in 8th semester, indicating that most participants were in the mid-phase of their undergraduate journey. Demographic characteristics are further detailed in Table 1, which provides a breakdown of age, gender, CGPA, and current semester distribution among the respondents.

Table 1. Demographic Characteristics of the Respondents

Variable	Mean (SD)	Range
Age	24.75 (5.6)	22- 45 years
Cumulative Grade Point Average	2.06 (0.6)	0.93-3.0
	Frequency (%)	
Gender (female: male)	12:4 (75:25)	
Semester of Enrollment (6th Sem:8th Sem)	10:6 (62.5:72.5)	

Awareness of Graduate Attributes

A total of 9 participants (56.3%) reported that they were not familiar with the term, 25% (n=4) indicated awareness, and 18.8% (n=3) were unsure whether they knew about it.

Competency Levels in Graduate Attributes

Competency was assessed using a Likert scale. The participants rated their perceived level of competence for each attribute. For both GAs examined, most participants considered themselves competent and aligned with the characteristics outlined in the MNU graduate policy. Figures 2 and 3   present the frequencies and percentages of responses, visually illustrating how participants perceived their abilities in relation to the graduate attributes of professionalism and lifelong learning.

Figure 2. Perceived competency levels for graduate attribute: Professionalism statements
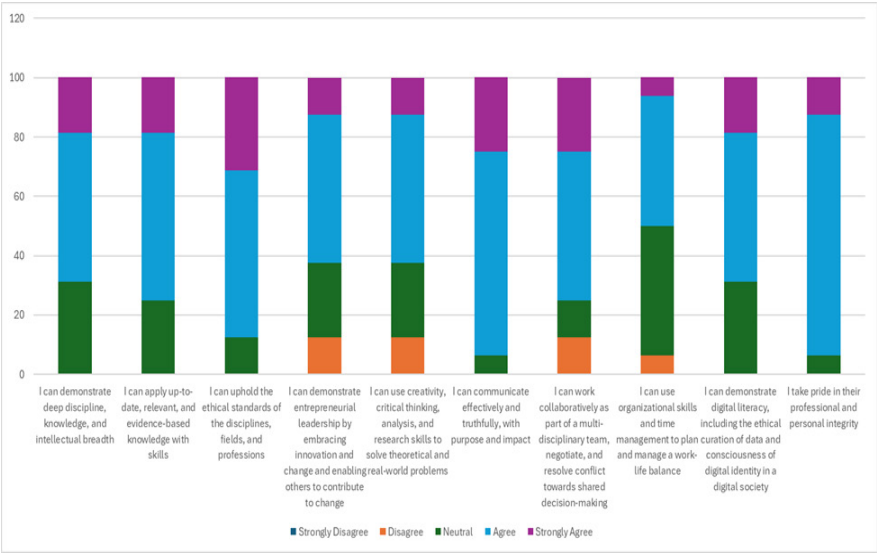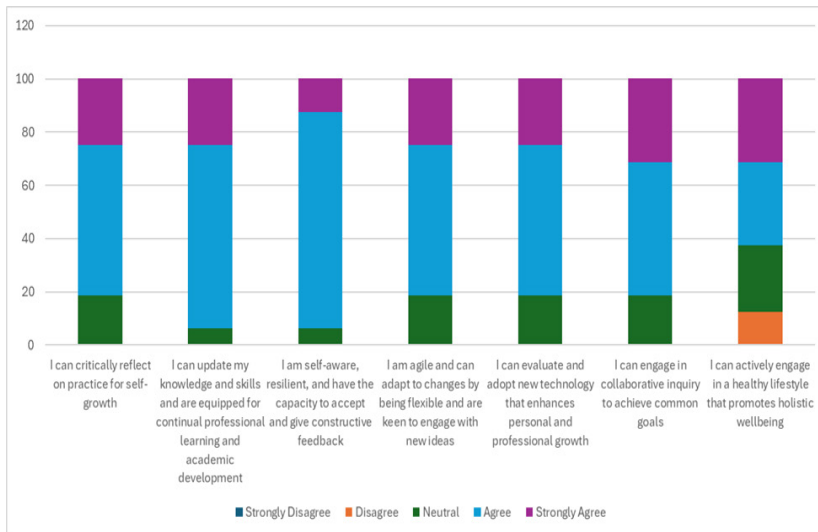
Figure 3. Perceived competency levels for graduate attribute: Lifelong learners statements

Qualitative Results

Five students participated in the focused group discussion. The FGD lasted for one hour and five minutes. The qualitative results were extracted from the discussion transcripts and the open-ended questions from the survey questionnaire. Thematic analysis was used to analyse qualitative data. The analysis of the transcripts revealed five distinctive themes:

- Understanding of graduate attributes
- Shaping of graduate attributes
- Challenges faced in developing graduate attributes
- Cultivating a research environment
- Perceived Importance of graduate attributes

Participants' Understanding of Graduate Attributes

It was imperative to comprehend how students conceptualise the notion of graduate attributes as an initial step in the study. Their comprehension was explored through an open-ended question in the survey and further discussed during the focused group discussion (FGD). Participants were encouraged to describe their understanding of the term "graduate attributes" in their own words, reflecting on their personal experiences and perceptions. This provided valuable insight into how students internalise these attributes and how they relate to their academic and professional development.

    A significant finding from the discussion was that students generally associated graduate attributes with skills and qualities necessary for career readiness and professional success. Many respondents described graduate attributes as competencies developed over the course of their university education, which enable them to transition effectively into the workforce. The word cloud (Figure

4) generated from the responses visually highlights the most frequently mentioned words used by students to describe graduate attributes, with "skills" and "qualities" being the most prominent terms.

Figure 4. Words used by respondents to describe graduate attributes

When participants were asked to define graduate attributes, various responses were received. For instance, Abu Bakar   (M, 22 years) defined it as "I believe it will be a quality and characteristic a student should have when they pass out from a course they enrolled in!". This highlights that attributes are qualities and specific characteristics that students develop during the course. Latifa (F, 25 years) further highlighted this notion of attributes being learned: *"I believe those are the qualities or values that students acquire during university life, so those are the things that teachers teach us, so that's it"*. Another dimension to the definition was provided by Khadija, who suggested that attributes are not only learned but can be experienced and must be applied during real-life scenarios. She stated, *"Attributes are …. the skills of practicing and the experience gained during the course"*. Hawwa (F, 21 years) reinforced this description of attributes; she stated: *"We have to apply these characteristics while we are professionals in physiotherapy."*

Throughout the focus group discussion, the students used various terms/concepts to refer to the attributes; Table 2 indicates multiple themes that emerged from the discussion.

Table 2. Participants' perspectives on the meaning of graduate attributes

Graduate Attributes
Communication Skills
Confidence
Punctuality
Clinical Reasoning
Decision Making

Interprofessional Collaborations

Conflict resolution

Teamwork

Ethical Awareness

Research

Responsibility

Time Management

Professionalism

Adaptability

Evidence-Based Practice

Competent

Participant-generated terms (Table 2) closely mirrored those reported by Kew and Bester (2014) regarding the important shared graduate attributes. These terms also correspond to the MNU graduate attribute policy, highlighting similar keywords. Although the students didn't know about GA as a concept, they displayed an understanding of it through different terms used during the discussion (Table 2).. This correspondence suggests that students grasp the essence of graduate attributes, even if these are not explicitly addressed in their study programmes. It also highlights that, by exploring students' perceptions, we can shift the perspective from viewing them as passive recipients to recognising them as active contributors who shape the meaning of graduate traits.
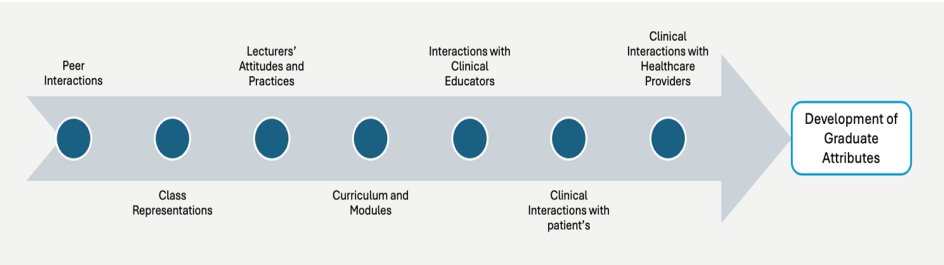
Shaping of Graduate Attributes

During the discussion it became evident that various factors shape the development of graduate attributes. The primary finding indicates that factors beyond educational components shape attributes. For instance, Latifa (F, 25 years) shared *"…. I believe that I attend the university every day, so the university is teaching us to be punctual, and that is one of the attributes"*. Abu Bakar (M, 22 years) shared that attributes are developed by following the footsteps of the lecturers as he shares *"…… the graduate attribute word I have not come across here , but like leadership skills, professionalism, these things are quite a lot practiced hard by our lecturers as well"*. All the participants highlighted practical exams, and practical classes play a key role in the development of GA. Figure 5 highlights the journey of students in acquiring GA(s).

Clinical interactions with patients and practicing physiotherapists also contributed to the development of certain attributes. For instance, Abu Bakar (M, 22 years) explained: *"Doing training with physiotherapists in hospital settings, we see a lot of patients… Even if two patients have the same condition, they are very different, requiring significantly individualised treatment. Each patient becomes a learning experience for each of us in every day, so lifelong learning is a very important attribute that a graduate should possess and continue to develop throughout their practice"*.

These experiences, both academic and clinical, emphasise the dynamic and ongoing nature of graduate attribute development. Students do not merely acquire attributes through formal teaching but actively construct them through reflection, real-world challenges, and continuous learning. This highlights the importance of creating learning environments that integrate classroom instruction with authentic clinical exposure and opportunities for critical thinking and self-awareness.
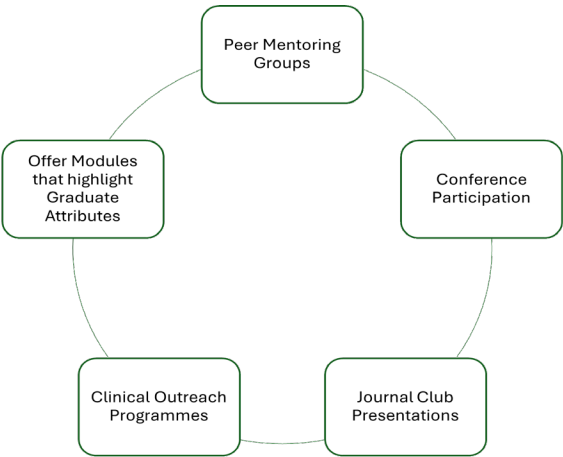
Figure 5. Factors stated by the participants that leads to development of GA.

Barriers and Facilitators faced in developing graduate attributes.

Participants also emphasised the multiple challenges and overcoming these challenges proved instrumental in fostering their growth and development of the GA. They highlighted that some modules did not give them enough prospect to develop GA. Hawaa (F, 21 years) shared "……*we even had a communication psychology kind of subject where we only studied theoretical concepts like those things, we did not learn these things much from them*". Fatima (F, 22 years) also stressed that certain modules did not help them develop GA. Time management was highlighted by most of the participants as a major challenge. Conflicts within peers were also identified as barriers. The participants suggested certain facilitators that may aid in the development of GA which are highlighted in Figure 6. Encouragingly, students pointed out that mentorship, constructive feedback, and interprofessional learning opportunities could serve as strong facilitators in overcoming these challenges.

Figure 6. Facilitators suggested by participants that could help in development of graduate attributes.

Cultivating Research Environment

Participants highlighted the importance of evidence-based practice in the development of GA. They shared that it has helped them in assessment and treatment of patients. They believed that research is the most important factor in making them lifelong learners. Abu Bakar (M, 22 years) worded it as *"I have noticed that almost all the lecturers come and teaches everyday what is the recent guidelines, what is the recent evidences that has been there has been published recently so they are not they do say that these are the previously they have been treated like this but currently the best treatment options for the patient is this according to these articles and they do bring us the recent researches recent evidences and constantly they make us constantly ah…..they are educating us about using recent researches recent practices because it is very important since these things are being changing researching evolving so lifelong learning is being developed"*. This highlights that to develop lifelong learner's faculties can cultivate a research environment through journal clubs and conferences.

Perception of the importance of graduate attributes

Another open-ended question explored the importance of GA according to the participants. Figure 7 highlights a word cloud displaying the different terms used to describe the perceived importance of attributes. GAs is considered essential because attaining them will ensure employment and future opportunities.

Figure 7. Word cloud highlighting the perceived importance of graduate attributes.

Integrating Quantitative and Qualitative Findings

In this study, quantitative results from the survey highlighted students' self-perceived competence in graduate attributes, showing varying levels of awareness and familiarity with concepts like professionalism and lifelong learning. This broad statistical view allowed for generalisation about the students' knowledge levels and confidence. The qualitative results, derived from thematic analysis, provided context to these quantitative findings by exploring personal experiences and the factors that shape the development of graduate attributes, such as mentorship, clinical interactions, and real-world application. By integrating these results, it becomes evident that while many students lacked formal understanding of "graduate attributes," they valued skills like critical thinking and teamwork, and

recognised these as essential to professional growth. This integration reveals gaps in both explicit institutional communication about GAs and a strong implicit development through experiential learning, highlighting areas for targeted curriculum enhancement to bridge knowledge with practice.

Discussion

This study found that students had various insights around graduate attributes. Most of the participants were not aware about the term *"graduate attributes"*. In terms of its importance, they related it to employability and future opportunities. During the FGD they used different descriptors to describe attributes (table 4). The comprehension of attributes may stem from inconsistencies in the ways that the institution communicates GAs to students. Most students have not heard about the term; they were not acquainted with it as a concept.

The qualitative interviews explored participants' understanding of the graduate attributes. They participants attributed different terms to describe graduate attributes. They used terms similar to the concepts mentioned in the MNU GA policy (Maldives National University, 2022). During the discussion they expressed that they do not have experience with GA as a course or module because these concepts were not included in their coursework. They emphasised that if the GA policy is discussed or some components of it are included in a teaching module, it will result in better integration of attributes. The study's findings also revealed that there appears to be a significant difference between the participants' conceptions of how graduate attributes are produced. Another way in which this relates to students' perspectives is that what matters to one individual may not matter to another. Thus, it appears that the clarity and application of GA are substantially different for each student.

The thematic analysis also shed light on the development of the attributes among students. The FGD highlighted that GA development is influenced by various factors, this indicates the necessity for employing a diverse range of methods to inculcate the attributes among university graduates. One important finding from the study is the high importance given by students to lecturers, especially in relation to the cultivation of GA. Participants perceive the lecturing faculty members as the primary representatives of the university and consider them crucial in shaping their engagement and experience as students. They also suggest that "good" qualities of the lecturers facilitate the development of GA implying the influence of hidden curriculum. Previous studies also suggest that hidden curriculum shapes experiences of students and help them develop GA (Karnieli-Miller et al., 2011).

Challenges faced by students in the development of GA were varied and more related to development of communication skills, confidence, and time management. They highlighted a lack of connection between GA and modules that they perceived would have facilitated the development of attributes. Moreover, they inferred that there is a lack of real-life scenarios and practical application in these modules. This may be taken as positive feedback to revise and redesign these modules so that they map with MNU GA policy. Discipline-specific modules and clinical placements acted as facilitators in the development of the attributes.

Participants in the study recognised that the GA would be linked to employability.

They believed that most employers look for graduates who have more to offer than their qualification or the certificate that endorses their degree. It was highlighted by the participants that professionalism and lifelong learning are key skills that employers seek. One of the key findings of the research was that clinical interactions and research modules were the most substantial in the development of GA. The other key mention was that interaction with *"clinical physiotherapist"* during clinical placements helped them in development of the attributes.

Implications

The findings of this study carry significant implications for higher education institutions, particularly for the Maldives National University (MNU) and similar academic settings where graduate attributes (GA) play a crucial role in shaping student competencies. One of the key takeaways is that graduate attributes should be intentionally embedded into the curriculum rather than being treated as supplementary components of higher education. This requires a structured approach where GA are explicitly integrated into course learning outcomes, assessment criteria, and co-curricular activities to ensure that students recognise their value and actively work toward their development.

Additionally, faculty members play a pivotal role in facilitating students' acquisition of graduate attributes. The study suggests that professional development programs for educators should be strengthened to equip faculty with strategies to integrate GA effectively into their teaching and assessments. This could involve training on active learning methodologies, interdisciplinary collaboration, and competency-based education that aligns with industry expectations.

From a policy perspective, the study highlights the need for continuous review and adaptation of GA policies to ensure their relevance in an ever-changing professional landscape. MNU and similar institutions should focus on regularly evaluating the effectiveness of their graduate attributes framework by seeking feedback from students, alumni, and employers. This feedback loop will help institutions refine their approach to competency development, ensuring alignment with real-world workforce demands.

Moreover, the research emphasises the importance of experiential learning opportunities such as internships, industry collaborations, research projects, and service-learning experiences. These practical engagements allow students to apply their graduate attributes in authentic professional and community settings, bridging the gap between academic theory and real-world practice. Expanding access to such opportunities will enhance students' employability and professional readiness, reinforcing the long-term value of graduate attributes.

Lastly, these findings suggest that institutions should develop student-centred strategies to ensure that the GA development process is done with students rather than to them. Encouraging students to actively engage in reflective learning, self-assessment, and peer collaboration can foster greater ownership over their personal and professional growth.

Conclusion

This mixed-methods study provides valuable insights into how students perceive, engage with, and develop graduate attributes throughout their academic journey.

By integrating quantitative survey data and qualitative focus group discussions, the research offers a comprehensive understanding of the factors that shape graduate attributes, as well as the challenges students face in their development.

A key finding of the study is that graduate attribute development should be an interactive and participatory process, where students are active agents in shaping their own professional and personal competencies. Rather than imposing predefined frameworks without student involvement, institutions should create opportunities for collaboration, self-reflection, and practical application of these attributes.

The research also underscores the need for continuous institutional support to foster the development of graduate attributes. Universities must ensure that their curricula are dynamic and adaptable, reflecting the evolving demands of both local and global job markets. This is particularly relevant in the Maldivian higher education landscape, where strengthening graduate competencies can have a direct impact on national workforce development and economic growth.

Furthermore, the findings suggest that the success of GA implementation depends on collaboration between students, educators, policymakers, and industry stakeholders. Future research could explore how graduate attributes evolve post-graduation, particularly in professional practice settings, to assess their long-term impact on career advancement and identity formation.

In conclusion, this study highlights the critical role of graduate attributes in shaping well-rounded, adaptable, and employable graduates. By adopting intentional, student-centred, and competency-based approaches, higher education institutions can ensure that graduates are not only academically proficient but also equipped with the essential skills, values, and mindsets needed to thrive in an increasingly complex and interconnected world.

Declaration

This paper was originally submitted in an assignment for subject EST451/ Pedagogy in Higher Education in the Postgraduate Diploma in Higher Education course as part of a course requirement at Maldives National University on May 2024. As a result, it appears in the Turnitin database, which has contributed to the current similarity index of 35%.

I confirm that I am the original author of this work, and the content is entirely my own. All external sources used have been properly cited according to the journal's required citation style. This work has not been previously published or submitted to any other journal.

References

Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health, 2*, 100051. https://doi.org/10.1016/j.glmedi.2024.100051

Barradell, S. (2017). Moving forth: Imagining physiotherapy education differently. *Physiotherapy Theory and Practice, 33*(6), 439–447. https://doi.org/10.1080/09593985.2017.1323361

Barrie, S. C. (2004). A research-based approach to generic graduate attributes

policy. *Higher Education Research & Development, 23*(3), 261–275. https://doi.org/10.1080/0729436042000235391

Barrie, S. C. (2006). Understanding what we ,mean by the generic attributes of graduates. *Higher Education, 51*(2), 215–241. https://doi.org/10.1007/s10734-004-6384-7

Bester, M. (2014). *Academics' conceptions and orientations of graduate attributes in applied design programmes at a university of technology.*

Coghlan, C. M., Mallinger, H., McFadden, A., Richard, J., Stern, A., & Norman, K. E. (2017). Demographic characteristics of applicants to, and students of, Ontario physiotherapy education programs, 2004–2014: Trends in gender, geographical location, Aboriginal identity, and immigrant status. *Physiotherapy Canada, 69*(1), 83–

Creswell, J. W., & Creswell, J. D. (2023). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.*

Humburg, M. (2013). *What is expected of higher education graduates in the 21st century?*

Karnieli-Miller, O., Vu, T. R., Frankel, R. M., Holtman, M. C., Clyman, S. G., Hui, S. L., & Inui, T. S. (2011). Which Experiences in the Hidden Curriculum Teach Students About Professionalism?: *Academic Medicine, 86*(3), 369–377. https://doi.org/10.1097/ACM.0b013e3182087d15

Kew, B. (2014). *A study of the relationship between students' participation in the commerce education development unit and their graduate attributes.*

Krueger, R. A., & Casey, M. A. (2015). *Focus groups: A practical guide for applied research* (5th edition). SAGE.

Leggett, M., Kinnear, A., Boyce, M., & Bennett, I. (2007). *Student and staff perceptions of the importance of generic skills in science.* https://doi.org/10.1080/0729436042000235418

Lygo-Baker, S., Kinchin, I. M., & Winstone, N. E. (Eds.). (2019). *Engaging Student Voices in Higher Education: Diverse Perspectives and Expectations in Partnership.* Springer International Publishing. https://doi.org/10.1007/978-3-030-20824-0

The Maldives National University. (2022). *Graduate attributes policy.* The Maldives National University.

Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: What can be done? *Assessment & Evaluation in Higher Education, 33*(3), 301–314. https://doi.org/10.1080/02602930701293231

Stewart, J., Shanmugam, S., & Seenan, C. (2016). Developing 21st century graduate attributes: Incorporating novel teaching strategies in a physiotherapy curriculum. *European Journal of Physiotherapy, 18*(3), 194–199. https://doi.org/10.1080/21679169.2016.1181205

Terry, G., & Hayfield, N. (2021). *Essentials of thematic analysis.* American

Psychological Association. https://doi.org/10.1037/0000238-000

Wong, B., Chiu, Y.-L. T., Copsey-Blake, M., & Nikolopoulou, M. (2022). A mapping of graduate attributes: What can we expect from UK university students? *Higher Education Research & Development, 41*(4), 1340–1355. https://doi.org/10.1080/07294360.2021.1882405

World Physiotherapy. (2021). *Physiotherapist Education Framework.*

Ye, P., & Xu, X. (2023). A case study of interdisciplinary thematic learning curriculum to cultivate "4C skills". *Frontiers in Psychology, 14*, 1080811. https://doi.org/10.3389/fpsyg.2023.1080811