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The Report on Namangan Institute of Engineering and Technology preparedness for future challenges

Namangan Institute of Engineering and Technology,
Uzbekistan

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Introduction

This Report on HEI preparedness for future challenges at **NAMANGAN INSTITUTE OF ENGINEERING AND TECHNOLOGY** (NIET) serves as a basic document for further work on the project "Triggering innovative approaches, entrepreneurial skills and attitudes in HEI learners through creating the favourable conditions for graduate's employability in Central Asia" (TRIGGER) outputs preparation. The assessment is based on the HEInnovate tool - a free self-assessment tool for all types of HEIs, which is an initiative of the European Commission, DG Education and Culture and the OECD LEED Forum. Generally, it is intended for HEIs which are interested in assessing themselves against a number of statements related to the entrepreneurial and innovative nature of their higher education environment. The Report provides the first practical inside to eight areas:

1. Leadership and Governance
2. Organizational Capacity: Funding, People and Incentives
3. Entrepreneurial Teaching and Learning
4. Preparing and Supporting Entrepreneurs
5. Digital Transformation and Capability
6. Knowledge Exchange and Collaboration
7. The Internationalised Institution
8. Measuring Impact

The strength and weaknesses of NIET are identified and suggestions for strength support and weakness overcoming prepared.

The self-assessment of NIET was carried out from 21st April to 11th of May, 2021. The respondents included top management of the university, teachers, researchers, professional and support staff.

Altogether **47 (forty seven)** respondents answered survey questions, of which 16 from top management, 13 teachers/researchers, 13 teachers related to entrepreneurship education and 5 support staff.

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1. University in a glance

The history of the institute dates back to 1970s when it was founded as a branch of a Tashkent Textile Institute. In 1992 it became independent taking the name of Namangan Institute of Engineering and Economics. In 2011, the institute was turned into Namangan Institute of Engineering and Technology. All changes were made on the basis of governmental decision, which stemmed from needs and available opportunities in the country. The textile and light industry faculties of the institute still makes it unique in Fergana Valley (consists of Andijan, Fergana and Namangan regions), and one of 3 in Uzbekistan. Faculties such as chemical technology, technology of agricultural products, food technology, automation, energy were later established and have been developing since then. The Institute had high reputation during 1992-2011 thanks to its faculties of economics such as finance, banking, marketing and economics. In 2011 education of the institute was directed more towards engineering. As a result of reforms in higher education sector of the republic of Uzbekistan in the last 3-4 years, the faculty of economics is also expanding again at the institute and marketing, economics, accounting have started prospering again. Specialities of banking and finance are also expected to open in the near future. The institute has been cooperating with industries in order to develop skills of students practically and with several universities abroad in order to update teaching processes.

NIET has 6 faculties: Engineering and Technology, Technology of Light Industry, Chemical Technology, Automation and Energy, Economics, Technology of Agricultural Products. They include 24 departments, which currently offer 25 programs at bachelor's level, 15 programs at master's level, 37 programs at PhD level. In the last 3 years there was a sharp expansion in admission and now NIET has over 7 thousand students. The number of alumni is over 10 thousand since it started its activities.

NIET now mainly prepares engineers and specialists for economic spheres of industries as well. The aspect which makes NIET unique in Ferghana valley is that it comprises full cycle of processes related to cotton offering programs on technologies related to cotton harvesting, storing, processing, yarn making, fabric making, tailoring, design of clothes, cost calculation and marketing of the product.

2. University organisation and management

There are 320 academic and 120 non-academic staff, as well as 64 researchers currently functioning at NIET. Scientific potential comprises of 52% (Number of teachers holding PhD, and DSc degree divided by total number of teachers). I

The total budget of NIET comprises 5,7 million euros of which 57,9% comes from private sector and 42,1% from public sector. NIET is a public entity and therefore it is financed by governmental budget. Financial revenue is formed from private sector as well. In average 10% of students are taught on

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budget provided by the government and the rest pay for tuition. Students are paid monthly stipend as well. Those who study by paying tuition fee have an option of paying for tuition by deducting the monthly stipend amount from tuition fee i.e. studying without stipend. Current research budget of NIET comprises 0,32 million euros.

Rating of the institute has been increasing in the last three year in national ranking system. This year NIET gained 11th place among 69 public HEIs which participated in the ranking. In terms of technical fields NIET gained 4th place among 21 HEIs. Scientific potential is 52 % (Number of teachers holding PhD, and DSc degree divided by total number of teachers). NIET has not achieved places in international ranking systems such as QS, ARWU and THE yet, but attempts are being made to enter those systems. One achievement recently was to get a status of a “reporter” in THE system.

Regarding **Quality Assurance**, each program has its state standard. Republican Inspectorate for the Quality of Education regularly every 5 year checks whether programs are meeting the standard requirements. Academic staff of the institute participate regularly every 3 years in training, increase their qualifications and are tested simultaneously. This training and testing is conducted for heads of departments, deans and vice-rectors as well. These trainings and tests are organized by the head scientific methodological centre of the republic. Each program and each academic staff is certified once qualifying. Each staff and program has to qualify to continue functioning at the institute. There is no sole quality certificate given to NIET.

NIET has been increasing the number of international partnerships, in order to increase **staff training opportunities organised abroad**. The institute had the opportunity to send 10% of its staff abroad for short trainings in the last 2 years by building relations with universities in Malaysia, China, Turkey and Central Asian countries, as well as by participating in international programs such as Erasmus Plus.

Regarding NIET’s identity and brand, the institute is known as Namangan Institute of Engineering and Technology i.e. “Namangan Muhandislik-Texnologiya Instituti” in Uzbek language. It has its own logo, which is now about to be replaced by a different shape. Local people call it “textile institute” as it functioned as textile institute for long and it is still unique in Ferghana Valley in preparing specialists for textile and light industry. Abbreviation of the name of the institute is NamMTI in Uzbekistan, which is NIET in English, which can also be seen as NETI in some older sources. Nowadays, NIET is producing items with the name and logo of the institute and selling them at a recently-established-store in campus.

Marketing and Communication Plan. In order to increase the popularity of the name and logo of the institute, NIET started producing clothes, caps, fabric-bags, with the name of the institute, which are prepared by students. They are sold at the store in campus. Additionally, ceramic plates, mugs, notebooks, pens with the name or logo of the institute can also be found at the store. Official telegram channel is run by media personnel of the institute. The channel is updated with news very frequently,

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disseminating news of NIET. There are boards in the campus where different announcements can be found.

In the marketing and communication office, the media personnel of the institute are functioning in delivering announcements and news through available social media mentioned above. They are in touch with mass media, and therefore if there is an event at the institute it can be very well illustrated not only on NIET's social network but also on TV as well. There is another department, whose function can be related to marketing activities. The department is responsible for accumulating requirements of organizations and monitoring the employment of graduates. This function is to be improved as it is serving mainly for official purposes. Regular market analysis and forecasting have to be maintained.

For **internal communication**, telegram network is widely used. Each group, department, faculty, etc. have their telegram groups through which information can be spread very quickly. And also boards can be used for announcements.

External communication is a responsibility of media personnel in terms of distributing information through social networks. Exhibitions are also organised sometimes to distribute information about available programs or scientific activities. Academic department mainly and relevant departments also are responsible for organizing and participating in the exhibitions with materials related to their programs. Department of sciences is responsible for organising exhibitions on scientific activities.

International relations office is the main responsible for **international communications**. Media personnel prepare news for social networks in uzbek language, and it is the international office's responsibility to organize English translation of it and provide it for posting in social media.

NIET's website can be found at www.nammti.uz. The website design has been improving year by year. Menus are convenient, well-structured to find required info. It is designed to be in 3 languages, but not always all translations can be found at this stage, but NIET plans to improve this quality. Another shortage is that the program content is not provided yet, i.e. applicants will not get information on what courses and when the courses are taught in a chosen program. In some sources it may be known "course catalogue".

Regarding social networks of NIET, Telegram is most popular network at the moment. NIET has over 3,5 thousand subscribers at its official channel https://t.me/nammtiuz. Facebook account at www.facebook.com/nammtiuz has 1,1k followers. Twitter profile https://twitter.com/nammtiuz, Instagram at www.instagram.com/nammtiuz, youtube at www.youtube.com/nammtiuz. are also used. These networks are run and fed with different news of NIET daily by media personnel of the institute.

NIET recently established a store where clothes, caps, fabric-bags, with the name of the institute, prepared by NIET's students, are sold. Additionally, ceramic plates, mugs, notebooks, pens with the name or logo of the institute can also be found at the store. There is no online merchandise running at the moment.

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3. Education

Currently, the **total number of students** at NIET is exceeding 7 thousand. Most of them are at bachelor level, the number being over 6,6 thousand. Master's program has over 3 hundred students. PhD level students are 64 in total. The number of PhD students is expected to increase sharply as government is about to increase the number of places for admission to PhD. There is further degree available in Uzbekistan after PhD degree which leads to Doctor's degree. 3 researchers are now pursuing their research activities at this level. Bachelor and Master level studies are financed partially by government, partially are contract based, i.e. some students pay tuition fees, some study based on governmental grant. PhD and Doctor level activities are fully financed by governmental budget. There are very few international students at the moment: 2 from Pakistan and 1 from Zambia. Institute has to work on increasing the number of foreign students.

As expansion is taking place at the institute, the **total number of study programs** is also increasing. At the moment there are 31 programs at bachelor level, 18 at master level and PhD students are conducting research in 37 different fields.

Accreditation of study programmes. Every 5 years, the Republican Inspectorate for the Quality of Education conducts certification and accreditation of the institute. Main accreditation takes place on programs offered by the institute. An independent commission is formed from experts in various fields. For example, the educational process of an institution is checked by a specialist in the educational process of leading universities. Students' knowledge is determined by conducting tests. Teaching materials and documents, sufficiency and state of labs are also checked. All programs are required to meet the requirements in order to continue running. Besides educational processes, available conditions are also checked, e.g. the number of seats in the classrooms, the correspondence of the arrangements of desks and other educational furniture, lighting, renovation of premises, landscaping of the territory of the institute, the percentage of providing students with a hostel, literature, the presence of sports and other sections, etc. are studied. The total number of teaching staff, the ratio to the number of students, scientific potential, as well as the number of seats in canteens, libraries and other additional departments of the institute are being studied. Training documentation for each area is also studied, their maintenance and preservation in accordance with the requirements. Moreover, institute is checked in the following areas: fire safety, sanitary and epidemiological, ecology, labor protection, etc.

NIET does not have programs yet which are **accredited by international organizations.**

Mobility indicators (all mobility programs)

	Incoming	Outgoing

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Number of students	**10**	**17**
Number of teachers/professors	**19**	**20**

Students from partner university in Malaysia came to NIET for short period as exchange students based on the inter-institutional agreement. NIET sent 17 students in total to universities in Malaysia and China. As there are many agreements with HEIs abroad, the way is open to increase the number of outgoing mobilities which requires additional funding. More professors with sufficient English skills are required to increase the number of incoming mobility of students.

Outgoing mobility of academic staff is about to increase as there are funds now being announced such as “El-yurt umidi”, and programs offered by the Ministry of Innovation.

NIET does not offer free **online courses**, but all professors gained experience in teaching online during pandemic COVID-19. The platform used was ZOOM and at times telegram is also used. Gained skills now are being used in organizing classes with the participation of foreign professors as well.

There are no summer courses or short training courses at NIET running regularly. Sometimes, English courses are organized, stemming from the request of departments.

Currently, there is no unique database or platform organized for an **alumni network**. Departments have contacts of some of their alumni to use when needed. Surveys with alumni are also conducted through contacts of alumni available at different departments.

All departments have their own **databases of companies and other institutions**, which are summed at the department of sciences of the institute. There is a need to form a platform to keep data and to communicate with companies. It would increase effectiveness of working with them as there are many aspects of collaboration: internship, scientific, course design collaboration, exhibitions, conferences, etc.

4. Research and Innovation

PhD researchers of NIET are conducting research in 37 different fields. They are bound to relevant departments based on their speciality. There are laboratories for textile, light industry, chemical technology and technological machines & equipment.

Regarding scientific publications, the number of articles published by researchers employed at the institution is 633 (341 of them in international journals in general). NIET has one scientific journal which is published every quarter of a year. The number of highly cited papers (in top 1% based on the total

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number of citations in the specific field in one year) is 1581 (in Scopus -144). Publications with international collaboration comprises **4%.**

NIET is involved in national **research projects** with international collaboration with a total amount of 121705 EUR. As to international projects NIET participates in 1 project with EU, 1 project with USA, 1 project of World Bank and 1 project with Malaysia, which comprise 145553 EUR in total.

Regarding the involvement of **foreign researchers,** 19 professors gave lectures/seminars and exchanged research activities with academic and research staff of NIET. Additionally, there are currently 2 professors from Malaysia employed at NIET as researchers.

Research funding from 2016 to 2020 from state budget comprised 0,2 mln euros. There used to be a committee funding scientific projects which now turned into the Ministry of Innovation. Professors/researchers submit their projects and receive funding if they qualify. From private sector, i.e. from companies 0,02 miln euros was received for research activities. NIET participated in programs such as Erasmus +, US government programs and World Bank totalling 0,1 mln euros.

The average numbers of **research fellowships** are 27 for incoming mobilities and 46 for outgoing mobilities (Marie Currie, Humboldt, Fulbright, etc.), 2 for incoming and 14 for outgoing MSc, PhD and postdoc research mobilities.

Regarding **innovation indicators,** 107 national and 6 international new patent applications were submitted, and 1 new Spin Off was created.

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5. International cooperation and internationalisation

There are about 40 **international agreements**, most signed for 5 years or without end date. Staff and student mobilities, participation in conferences, collaborative research are carried out on the basis of these agreements. Through its participation in international projects, NIET is in touch with Erasmus + of EU and US Embassy.

There are no **grants offered** at this time **to international students**. Accommodation and food is covered normally in case of exchange students on the basis of mutual agreement and in its turn, NIETs exchange students' expenses on accommodation and food are also covered by partner university on the basis of agreement.

The international activities management model is mixed, as ministry orders are top down while initiation in participation in international projects can go from bottom up. The Vice-rector in International cooperation and head of international relations department participate in meetings of board of management.

Regarding the **level of internationalization** of NIET, English learning is highly urged by the government, and all staff are aware of advantages of having English skills. Everyday a person is assigned to be on duty on the campus Help Desk, to direct visitors to relevant departments. In case of foreigners, international department can help. Internal Communication in English can be noticed sometimes among youth who are in learning process. English department teachers sometimes communicate in English within the department. NIET is trying to be active in social networks, Telegram is widely used at the moment. NIET has a scientific journal, which is published every quarter. The recently established on campus merchandise, sells textile items produced by students of the institute and other items with NIET's name and logo.

6. Grading system

Since the last 2021-2022 academic year (i.e. 1-2 courses), the institute has been gradually transitioning to student assessment in a credit-modular system and senior courses continue to be evaluated on a 5-point system. In both cases, there are current controls (for practical and laboratory classes), mid-term controls (for lectures) and final control. In a credit-modular assessment system, a student performs a certain workload to master the subject and earns a certain number of credits based on the acquired knowledge, skills and abilities. Students' knowledge is evaluated on a 5-point system. Assessment of students' knowledge at Mid-term Controls is carried out by professors-teachers who conducted the training. The final control and assessment of students' knowledge on this type of control is carried out by professors-teachers who did not conduct classes in this discipline for these students. The student before the Final control in the relevant discipline must pass the mid-term control. A student who has

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received a mark of “3” or higher in a discipline is considered to have mastered the subject and receives all the credits allocated for this discipline. A student who has not passed the Mid-term control, and also received a mark of "2" (unsatisfactory) for this type of control, receives a non-admission to the Final control. A student who did not come to the Final Control or was not admitted to it, as well as who received a grade of "2" (unsatisfactory) in the Final Control, is considered not to have mastered the discipline and becomes an academic debtor. A student who did not come to the Final Control or was not admitted to it, as well as who received a grade of "2" (unsatisfactory) in the Final Control, is considered not to have mastered the discipline and becomes an academic debtor.

7. Informatisation

Since the 2021-2022 academic year, in order to minimize the human factor and eradicate corruption in this area, NIET, along with other public HEIs in Uzbekistan, has introduced an information system for managing higher education processes - HEMIS (Higher education Management Systems). It includes such information systems as "Administrative management", "Educational process", "Scientific activity" and "Financial management and statistics". A mobile application has been developed for students, where students, using an individual login and password, can enter and receive the necessary information in the HEMIS system, such as electronic resources, lesson schedules, exam schedules, assignments, interactive services, etc. Also in the mobile application it is possible to download information about the diploma (file) with a QR code for graduates of the current year.

Group magazines and rating (test) books were abolished. In this system, each student through his profile has the opportunity to receive electronic resources of subjects, information about the schedule of classes and tests, as well as attendance and academic performance.

As to communication within a group, within department, within faculty, withing management board, etc. “Telegram” messenger is used widely. Each category of group has a telegram group where members communicate with each other and have possibility to discuss issues online. An there is a channel of the institute where all members of the channel can get familiar with daily important news at the institute. Moreover, thanks to communications through telegram, USB memory cards are becoming less common.

International strategies and annual objectives are discussed in management board discussions. Increasing the number of foreign partners, organizing joint conferences, establishing joint programs, attracting foreign applicants are required by the Ministry of Higher Education. Therefore, internationalisation is available in the strategic plan of NIET.

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This year, all admission for masters and PhD level required IELTS certificate in English language. Those who cannot present their IELTS results, will not qualify to next steps. Students and also the teachers go to English courses.

Recently, a new job place has been established which is vice-rector for international cooperation, as a result of NIET's internationalization process. Until then there was only a position of head of international relations department, which is still available.

NIET acts under the Ministry of Higher Education of the Republic of Uzbekistan. All **international cooperations** have to be established and carried out in accordance with the requirements of the Ministry.

All forms are mainly in Uzbek and Russian. Diplomas have two side one side being Uzbek and another in English. Diploma supplement is either in Uzbek or in Russian depending on what was the language of instruction.

In NIET **funding is allocated to international operations** in agreement with the organisation's internationalization. NIET is funding some international travels, and also paying for invited foreign professors' travels, their lectures/seminars for short time.

Regarding i**nternationalization activities,** NIET mainly focuses on student mobility, academic staff mobility, bilateral or multilateral cooperation, international traineeship, strategic partnerships, study programs in English, international marketing, international capacity building projects, joint/double degree study programs with international partners, internationalization of curricula and on international research activities. NIET's website is design in 3 languages: Uzbek, English and Russian. Improvement has to be carried out to organize the provision of prompt translation of news, announcements, etc.

Academic/administrative staff of NIET have been participating in international conferences, seminars and trainings. The number for these categories exceeds 100 in total.

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8. Self- assessment of dimensions based on HEINNOVATE

DIMENSION: Leadership and Governance

Number of respondents of the survey – 47.

Average value of points given by all staff categories is higher than 4.6, which can mean that the respondents consider that Leadership and Governance related activities in connection with entrepreneurship are being conducted well. The minimum grade given in the survey by respondents is 3.

Recommended measures to be taken by NIET, based on HEInnovate model.

1. Institute should identify its motto.
2. Entrepreneurial mindset should be harmonized at institute's development strategies.
3. Entrepreneurship should be stimulated at higher level.
4. A person should be appointed to coordinate/stimulate activities related to developing entrepreneurial activities of the institute.
5. Thorough analysis should be conducted on the impact of carried out entrepreneurial activities.

DIMENSION: Organisational Capacity: Funding, People and Incentives

Similar picture can be noticed in this dimension as well. Average grades given by respondents are equal or higher than 4,7. The minimum grade given by respondents is 3. If we pay attention to questions of this grade, some points can be clarified on improving organisational capacity of the institute in terms of providing opportunities for developing entrepreneurial mindset.

Recommended measures to be taken by NIET, based on HEInnovate model.

1. Provide harmony of expenses towards entrepreneurship within expenses of overall strategy.
2. Distinguish, recognize and promote those who are contributing in entrepreneurial activities.
3. Make office and laboratory space available for staff to pursue entrepreneurial activities.

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4. Hire external professionals with entrepreneurial experience/knowledge when needed.
5. Link the training needs of staff with career objectives that support the entrepreneurial agenda.

DIMENSION: Entrepreneurial Teaching and Learning

Lowest average grade constitutes 4,6 in this dimension. Four questions accumulated average grade of 4,7, and the rest of the grades are higher. The lowest grade given by respondents is 3. Stemming from the lowest grades, followings can be concluded:

Recommended measures to be taken by NIET, based on HEInnovate model.

1. Support curriculum change to stimulate and develop entrepreneurial mindsets and skills through new pedagogies, student-centred, cross-disciplinary and practice-based learning (e.g. living labs, the use of case studies, games and simulation)
2. Provide support and training to staff in creating new curriculum related to entrepreneurship.
3. Introduce new mechanisms for supporting students, including experiencing starting new ventures within the students' formal education or delivering entrepreneurship education with practicing entrepreneurs.
4. Codify the expected entrepreneurial learning outcomes in relation to knowledge, skills and competences in all degree programmes.
5. Regularly review and assess the involvement of external stakeholders in course design and delivery.
6. Encourage staff and educators to review the latest research in entrepreneurship education

DIMENSION: Preparing and Supporting Entrepreneurs

Description of the main results of the self-assessment for this dimension.

Average grades are between 4,6 and 4,9. The lowest grade given is 3. On the basis of grades, recommendations are given as follows:

Recommended measures to be taken by NIET, based on HEInnovate model.

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1. Provide conducive framework conditions for start-up, such as enabling staff to own shares, work part-time, take sabbaticals, and the possibility for students to extend the duration of their study programmes to support starting a new venture whilst studying.
2. Offer funds to support market feasibility studies.
3. Offer tailored entrepreneurship courses across all subject areas and levels of study.
4. Provide feedback mechanisms on the contributions from entrepreneurs.
5. Offer microfinance instruments such as grants, prizes, loans and equity.
6. Embed the incubation facilities with the research and education infrastructure of the HEI to enhance synergies.

DIMENSION: Digital Transformation and Capability

Average grade values are relatively higher in this dimension constituting 4,7 at the lowest. Five answers accumulated 4,8 at average, and the rest of the questions have average grade of 4,9.

Recommended measures to be taken by NIET, based on HEInnovate model.

1. Develop a strategy that sets out the goals of how the institution will seek to innovate and improve by digital transformation.
2. Assess, monitor and communicate the benefits and added value of digital transformation across all activities of the HEI for innovation and entrepreneurship.
3. Provide training and development opportunities to staff on the use of digital technologies for teaching, learning and assessment.
4. Develop and implement a comprehensive open science strategy and action plan that is supported by a range of reward mechanisms.
5. Have strategies for communication, collaboration and networking underpinned by the use of digital tools.
6. Develop a clear set of performance metrics (Key Performance Indicators – KPIs) to drive the implementation of the strategies.

DIMENSION: Knowledge Exchange and Collaboration

Half of the questions (1))gained an average grade of 4,8, 5 gained an average of 4,7 and the remaining 5 gained an average of 4,9.

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Recommended measures to be taken by NIET, based on HEInnovate model.

1. Establish structures to exploit knowledge exchange and collaboration opportunities, and encourage staff to engage in such activities.
2. Provide monitoring and feedback of the mutual value developed through stakeholder relationships.
3. Have direct financial or management interest in science parks and incubators, ranging from participation to ownership.
4. Encourage, support and recognize mobility of staff and students through internships, sabbaticals, dedicated study programs (e.g. industrial doctorates, sandwich programs).
5. Have clear mechanisms for exploiting entrepreneurial opportunities with commercial and industrial partners.

DIMENSION: The Internationalized Institution

This dimension has higher grades than the previous one, highest average grade being 4,9 which covered 52% or 11 of total 21 questions. Lowest average grade was 4,7 which corresponds to 2 questions only. Remaining 8 questions each gained average grade of 4,8.

Recommended measures to be taken by NIET, based on HEInnovate model.

1. Build common objectives and synergies between internationalisation and the entrepreneurial agenda.
2. Develop PhD programmes in collaboration with other partner institutions.
3. Have a support system in place for the cultural integration of international staff.
4. Link international mobility objectives with the entrepreneurial agenda of the HEI.
5. Apply for European mobility programmes and support the application of staff and student to mobility grants, scholarships and programmes.
6. Increase the number of joint / double degrees which include entrepreneurship and innovation in their curriculum.
7. Ensure all departments and faculties actively participate in international research partnerships and networks.

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DIMENSION: Measuring Impact

Results of the survey in this dimension also included average grades from 4,7 to 4,9. However, it was quite opposite to previous dimension, the lowest figure of 4,7 dominated covering 11 questions out of 21, with only 1 question having a grade of 4,9, the highest figure. The remaining 9 questions gained average grade of 4,8.

Recommended measures to be taken by NIET, based on HEInnovate model.

1. Set clear intended outcomes / impacts related to its entrepreneurial agenda and collect evidence of the outcomes / impacts of the entrepreneurial agenda.
2. Use the evidence of the outcomes / impacts as a tool for reflection and review of the strategy and mission of the institution.
3. Undertake a skills / competence audit against the entrepreneurial agenda to assess its institutional development needs.
4. Measure the impact of entrepreneurship teaching and learning at different phases of its implementation (beginning, end, point in time after) to get an accurate picture of change.
5. Measure changes in participants' motivation and the level of knowledge, skills and competences gained through the entrepreneurship education activities.

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9. SWOT analyses based on self-assessment

STRENGTHS	WEAKNESSES
• Unique in providing programs of light industry in Fergana valley; • High position in current national rating; • Stimulating and supporting leader-Rector. • Availability of the Department of Marketing department, professors there in marketing and entrepreneurship.	• Motto unavailable • Market analysis is not conducted; • Lack of entrepreneurial mindset. • Language barrier for experienced professors; • Lack of programs in English; • Lack of up-to-date laboratories.
OPPORTUNITIES	**THREATS**
• Textile companies are expanding, providing need for more specialists in the field. • Enhancing cooperation with existing foreign partners; • Strengthening ties with partner companies. • Improving English skills of academic staff.	• Market change in demand for certain skills. • Increasing number of private universities which might effect on the movement of applicants as well as professors.

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10.The main areas for further intervention on Namangan Institute of Engineering and Technology's preparedness for future challenges

Activity	Dimension	Who	When
Institute should identify its motto.	Leadership and Governance	Management board, all departments	By the end of 2021
Entrepreneurial mindset should be harmonized at institute's development strategies.	Leadership and Governance	Management board advised by Department of Marketing	During academic year of 2021/2022
Link the training needs of staff with career objectives that support the entrepreneurial agenda.	Organisational Capacity: Funding, People and Incentives	Study department, all relevant departments together with Marketing Department	During academic year of 2021/2022
Introduce new mechanisms for supporting students, including experiencing starting new ventures within the students' formal education or delivering entrepreneurship education with practicing entrepreneurs, and encourage staff and educators to review the latest research in entrepreneurship education	Entrepreneurial Teaching and Learning	Study department, all relevant departments together with Marketing Department	During academic year of 2021/2022
Offer tailored entrepreneurship courses across all subject areas and levels of study, and offer funds to support market feasibility studies.	Preparing and Supporting Entrepreneurs	Study department, all relevant departments together with Marketing Department	Development: during the academic year of 2021/2022, Realization: during academic year of 2022/2023

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Develop a strategy that sets out the goals of how the institution will seek to innovate and improve by digital transformation.	Digital Transformation and Capability	Department of Innovation and Scientific issues, Center for Informational Technologies	During the project
Have clear mechanisms for exploiting entrepreneurial opportunities with commercial and industrial partners.	Knowledge Exchange and Collaboration	Study department, all relevant departments together with Marketing Department	During the project
Increase the number of joint / double degrees which include entrepreneurship and innovation in their curriculum and develop PhD programmes in collaboration with other partner institutions.	The Internationalised Institution	Study Department, Science Department, all relevant departments, international relations department	Always
Undertake a skills / competence audit against the entrepreneurial agenda to assess its institutional development needs.	Measuring Impact	Marketing Department	Once a year
Measure the impact of entrepreneurship teaching and learning at different phases of its implementation (beginning, end, point in time after) to get an accurate picture of change.	Measuring Impact	Marketing department	Once a year

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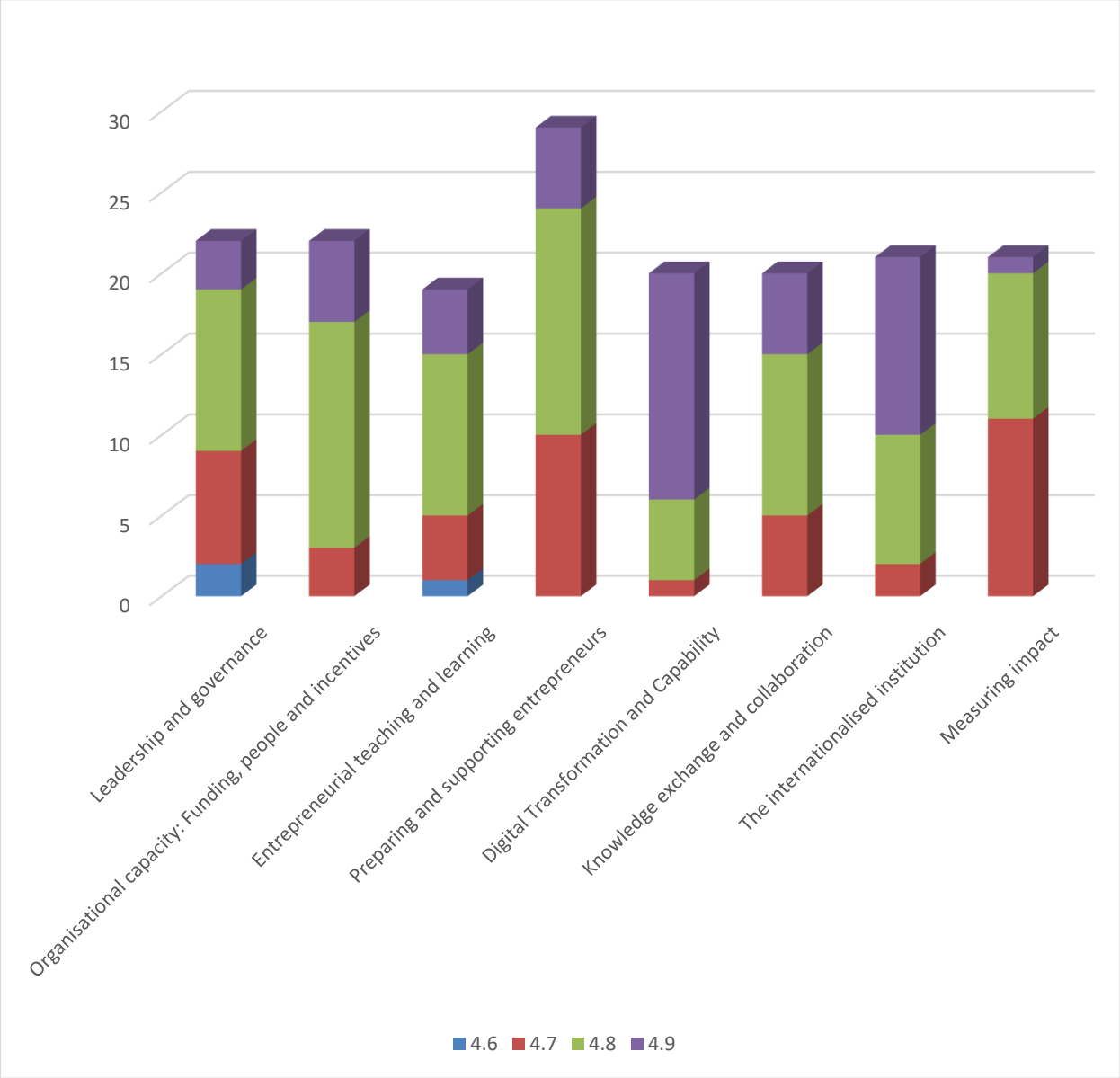


Chart-1. General picture of average grades of NIET's survey results on its preparedness for future challenges

More attention should be given to improve points of dimensions with more red and some blue.

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