Information and Communication Technologies

https://doi.org/10.63377/3005-4966.2-2024-13
UDC: 378
IRSTI: 14.35.09

The use of a soft skill for effective learning to form professional competencies of students at a technical university

[1]Kalybekova B.K.,[*2]Ospanova A.A., [2]Juldikaraeva F.T.,[2]Ryskeldiyeva G.D.,[2]Tuyebekova Z.D.

[1]Internationak Educational Corpration, Almaty, Kazakhstan
[2]Kazakh Automobile and Road Institute named after L.B. Goncharov, Almaty, Republic of Kazakhstan
*Corresponding author email: ait.ospanova@gmail.com

Received:
27 January 2024
Peer-reviewed:
24 February 2024
Accepted:
26 March 2024

Abstract

In the article of modern education, the development of both theoretical knowledge and practical skills has become a crucial goal, particularly in technical universities. This paper explores the integration of soft skills training into the process of forming professional competencies among students in technical universities. The study highlights the necessity of creating a language environment that promotes effective interaction among students and faculty members. By emphasizing the professionally oriented components of language and speech competence, the approach supports the development of a specialist's ability to use linguistic and communicative skills effectively. The research methodology combines theoretical instruction with practical applications, including teamwork, problem-solving, role-playing, and intercultural communication tasks. The results indicate significant improvements in students' professional competencies, including enhanced technical language proficiency, improved teamwork and leadership skills, greater adaptability, and the ability to present technical information clearly to diverse audiences. The findings also underscore the importance of intercultural strategic competence in preparing students for international collaborations. Moreover, cognitive-based learning strategies facilitated knowledge retention and application in real-world contexts. This paper emphasizes that soft skills such as communication, critical thinking, and creativity complement hard skills, offering students a competitive advantage in the labor market. The conclusions drawn from the study suggest that a balanced integration of hard and soft skills within a competency-based framework is essential for preparing future engineers and technologists to thrive in the rapidly evolving digital and global economy.

Keywords: communicative-oriented concepts, complex, suxopedic, suxistocybernetic, suxopedia, paralinguistic components, suxocybernetic method, interactive intensive.

Kalybekova B.K.	***Information about authors:*** *Candidate of Philological Sciences, Assosiate Professor, Internationak Educational Corpration, Almaty, Kazakhstan, ORCID ID:* https://orcid.org./0009-0003-3005-7913. *E-mail:* bayansulu.kalybekova @mail.ru
Ospanova A.A.	*Senior lecturer of the Department "History of Kazakhstan, General Education disciplines and Information Systems", Kazakh Automobile and Road Institute named after L.B. Goncharov, Almaty, Kazakhstan, ORCID ID:* https://orcid.org./0009-0009-5572-4085. *E-mail:* ait.ospanova@gmail.com
Juldikaraeva F.T.	*Senior lecturer of the Department "History of Kazakhstan, General Education disciplines and Information Systems", KazADI named after L.B. Goncharov, Almaty, Kazakhstan, ORCID ID:* https://orcid.org./0009-0004-4801-7546. *E-mail:* fatimajuldikarayeva@mail.ru
Ryskeldiyeva G.D.	*Master of Pedagogical Sciences, senior lecturer KazADI named after L.B. Goncharov, Almaty, Kazakhstan, Automobile and Road Institute named after L.B. Goncharov, Almaty, Kazakhstan, ORCID ID:* https://orcid.org/.0000-00034827-5698. *E-mail:* gdr_69@mail.ru
Tuyebekova Z.D.	*Candidate of Philological Sciences, Professor of the Department "History of Kazakhstan, General Education disciplines and Information Systems", KazADI named after L.B. Goncharov, Almaty, Kazakhstan, ORCID ID:* https://orcid.org/.0009-003-3550-9878. *E-mail:* tuyebekova.zd@mail.ru

Ақпараттық-коммуникациялық технологиялар

https://doi.org/10.63377/3005-4966.2-2024-13
ӘОЖ: 378
ҒТАМР: 14.35.09

Техникалық университет студенттерінің кәсіби құзыреттіліктерін қалыптастыруда тиімді оқыту үшін жұмсақ дағдыларды қолдану

[1]Калыбекова Б.К.,[*2]Оспанова А.А.,[2]Джулдикараева Ф.Т.,[2]Рыскелдиева Г.Д., Туебекова З.Д.

[1]Халықаралық білім беру корпорациясы, Алматы қ, Қазақстан
[2]Л.Б. Гончаров атындағы Қазақ автомобиль-жол институты, Алматы қ, Қазақстан
*Автор-корреспондент email: ait.ospanova@gmail.com

Мақала келді:
27 қаңтар 2024
Сараптамадан өтті:
24 ақпан 2024
Қабылданды:
26 наурыз 2024

Түйіндеме

Бұл жұмыста жұмсақ дағдыларды оқытудың техникалық университеттердегі студенттер арасында кәсіби құзыреттілікті қалыптастыру процесіне интеграциялануы қарастырылған. Зерттеу студенттер мен оқытушылар арасында тиімді өзара әрекеттесуге ықпал ететін тілдік ортаны құру қажеттілігін көрсетеді. Тілдік және сөйлеу құзыреттілігінің кәсіби бағдарланған компоненттеріне баса назар аудара отырып, тәсіл маманның лингвистикалық және коммуникативтік дағдыларды тиімді пайдалану қабілетін дамытуға қолдау көрсетеді. Зерттеу әдістемесі теориялық оқытуды практикалық қосымшалармен, соның ішінде топтық жұмыс, мәселелерді шешу, рөлдік ойындар және мәдениетаралық коммуникация міндеттерін біріктіреді. Нәтижелер студенттердің кәсіби құзыреттіліктерінің айтарлықтай жақсарғанын көрсетеді, соның ішінде техникалық тілді меңгерудің жоғарылауы, топтық жұмыс пен көшбасшылық қабілеттердің жақсаруы, бейімделудің жоғарылауы және әртүрлі аудиторияға техникалық ақпаратты анық жеткізу мүмкіндігі. Сонымен қатар, когнитивті негізделген оқыту стратегиялары білімді сақтауға және нақты контексте қолдануға ықпал етті. Бұл жұмыста қарым-қатынас, сыни тұрғыдан ойлау және шығармашылық сияқты жұмсақ дағдылар студенттерге еңбек нарығында бәсекелестік артықшылық бере отырып, қиын дағдыларды толықтыратыны баса айтылған. Зерттеуден алынған қорытындылар құзыреттілікке негізделген жүйе шеңберінде қатты және жұмсақ дағдыларды теңгерімді түрде біріктіру болашақ инженерлер мен технологтарды қарқынды дамып келе жатқан цифрлық және жаһандық экономикада өркендеуге дайындау үшін өте маңызды екенін көрсетеді.

Түйін сөздер: құзыреттілік, құзыреттілікке негізделген тәсіл, жұмсақ дағды, құзыреттілік, мәдениетаралық құзыреттілік, тиімді оқыту, қалыптастыру, шет тілі әдісі, коммуникативтік құзыреттілік.

Калыбекова Б.К.	***Авторлар туралы ақпарат:*** *Ф.ғ.к.,, Халықаралық білім беру корпорациясы. Алматы қ, Қазақстан, ORCID ID:* https://orcid.org./0009-0003-3005-7913. *E-mail:* bayansulu.kalybekova @mail.ru
Оспанова А.А.	*аға оқытушысы. Л.Б. Гончаров атындағы Қазақ автомобиль-жол институты, Алматы қ, Қазақстан, ORCID ID:* https://orcid.org./0009-0009-5572-4085. *E-mail:* ait.ospanova@gmail.com
Джулдикараева Ф.Т.	*аға оқытушысы. Л.Б. Гончаров атындағы ҚазАЖИ, Алматы қ, Қазақстан, ORCID ID:* https://orcid.org./0009-0004-4801-7546. *E-mail:* fatimajuldikarayeva@mail.ru
Рыскелдиева Г.Д.	*Магистр, аға оқытушысы. Л.Б. Гончаров атындағы ҚазАЖИ, Алматы қ, Қазақстан, ORCID ID:* https://orcid.org/.0000-00034827-5698. *E-mail:* gdr_69@mail.ru
Туебекова З.Д.	*Филология ғылымдарының кандидаты, профессор,. Л.Б. Гончаров атындағы ҚазАЖИ, Алматы қ, Қазақстан, ORCID ID:* https://orcid.org/.0009-003-3550-9878. *E-mail:* tuyebekova.zd@mail.ru

Информационно-коммуникационные технологии

https://doi.org/10.63377/3005-4966.2-2024-13
УДК: 378
МРНТИ: 14.35.09

Применение мягкого навыка для эффективного обучения в формировании профессиональных компетенций студентов технического вуза

[1]Калыбекова Б.К., [*2]Оспанова А.А., [2]Джулдикараева Ф.Т., [2]Рыскелдиева Г.Д., [2]Туебекова З.Д.

[1]Международная образовательная корпорация, г. Алматы, Казахстан
[2]Казахский автомобильно-дорожный институт имени Л.Б. Гончарова, г. Алматы, Казахстан
*Автор-корреспондент email: ait.ospanova@gmail.com

Поступила:
27 января 2024
Рецензирование:
24 февраля 2024
Принята в печать:
26 марта 2024

Аннотация

В данной статье рассматривается интеграция обучения soft skills в процесс формирования профессиональных компетенций у студентов технических университетов. В исследовании подчеркивается необходимость создания языковой среды, способствующей эффективному взаимодействию между студентами и преподавателями. Акцентируя внимание на профессионально ориентированных компонентах языковой и речевой компетенции, этот подход способствует развитию способности специалиста эффективно использовать лингвистические и коммуникативные навыки. Методология исследования сочетает теоретическое обучение с практическим применением, включая командную работу, решение проблем, ролевые игры и задачи межкультурной коммуникации. Результаты свидетельствуют о значительном улучшении профессиональных компетенций студентов, в том числе о повышении уровня владения техническим языком, улучшении навыков работы в команде и лидерства, большей адаптивности и способности четко представлять техническую информацию различным аудиториям.. Кроме того, когнитивные стратегии обучения способствуют сохранению знаний и их применению в реальных условиях. В этой статье подчеркивается, что мягкие навыки, такие как коммуникация, критическое мышление и креативность, дополняют жесткие навыки, предоставляя студентам конкурентное преимущество на рынке труда. Выводы, сделанные в результате исследования, свидетельствуют о том, что сбалансированная интеграция жестких и мягких навыков в рамках системы компетенций необходима для подготовки будущих инженеров и технологов к успешной работе в быстро развивающейся цифровой и глобальной экономике.

Ключевые слова: компетенция, компетентностный подход, мягкий навык, компетентность, межкультурная компетенция, результативное обучение, формирование, метод иностранный язык, коммуникативная компетенция.

Калыбекова Б.К.	***Информация об авторах:*** *Кандидат филологических наук, ассоциированный профессор факультета общего строительства, Международная образовательная корпорация, г. Алматы Казахстан, ORCID ID:* https://orcid.org./0009-0003-3005-7913. *E-mail:* bayansulu.kalybekova @mail.ru
Оспанова А.А.	*Старший преподаватель, КазАДИ им. Л.Б.Гончарова, г. Алматы, Казахстан, ORCID ID:* https://orcid.org./0009-0009-5572-4085. *E-mail:* ait.ospanova@gmail.com
Джулдикараева Ф.Т.	*Старший преподаватель КазАДИ им. Л.Б.Гончарова, г. Алматы, Казахстан, ORCID ID:* https://orcid.org./0009-0004-4801-7546. *E-mail:* fatimajuldikarayeva@mail.ru
Рыскелдиева Г.Д.	*Магистр, старший преподаватель КазАДИ им. Л.Б.Гончарова, г. Алматы, Республика Казахстан, ORCID ID:* https://orcid.org/.0000-00034827-5698. *E-mail:* gdr_69@mail.ru
Туебекова З.Д.	*К.ф.н., профессор КазАДИ им. Л.Б.Гончарова, г. Алматы, Казахстан, ORCID ID:* https://orcid.org/.0009-003-3550-9878. *E-mail:* tuyebekova.zd@mail.ru

Introduction

Modern education sets itself the task of forming not only theoretical knowledge but also practical skills and professional competencies among students. This is especially important for students of technical universities, who must be able to apply their knowledge in practice to succeed in the fields of engineering and technology. The professionally oriented component of language competence can be defined as a system of linguistic knowledge, skills, and abilities that enable a specialist to produce linguistically correct and terminologically rich speech, along with a set of linguodidactic knowledge and skills that allow for the accurate representation and explanation of linguistic phenomena for educational purposes. The professionally oriented component of speech competence can be defined as a system of speech knowledge, biocultural skills, and individual abilities for speech production, enabling the speaker or writer to navigate the functional factors of communication and generate communicatively appropriate speech works (texts). The professional dimension of intercultural strategic competence contributes to creating favorable conditions for joint professional activities. Intercultural strategic competence implies the speaker's or writer's ability to vary communication strategies in the context of foreign-language intercultural communication. The inclusion of intercultural strategic competence allows for the activation, coordination, and balancing of all other types of competencies.

Methods

In this study, a competency-based approach was implemented in the language training of students at a technical university, integrating soft skills development into the curriculum. The methodology involved a combination of theoretical instruction and practical tasks, designed to simulate real-world professional scenarios. Students engaged in interactive learning activities, including role-playing, problem-solving exercises, collaborative projects, and presentations. To enhance the language environment, content and communication were delivered in English, focusing on the professional terminology relevant to students' fields of study.

Additionally, the program incorporated intercultural communication tasks to develop strategic competence and adaptability. The learning process was structured to align with cognitive principles, such as managing cognitive load, encouraging active engagement, and utilizing memory aids to facilitate long-term retention. The effectiveness of this approach was assessed through performance evaluations in both hard skills (technical knowledge and task performance) and soft skills (communication, teamwork, and adaptability).

Results

The implementation of a competency-based approach with a focus on soft skills development in technical university education led to a range of significant outcomes:

1. Enhanced Language Proficiency and Professional Communication

Students demonstrated measurable improvements in their use of English for professional purposes. This included confident participation in oral presentations, effective drafting of technical documentation, and precise use of professional terminology. Evaluations of oral and written tasks revealed a marked increase in fluency, accuracy, and clarity of expression. Many students expressed greater confidence in engaging in business correspondence, technical negotiations, and participation in international conferences.

2. Development of Soft Skills

The integration of soft skills into the curriculum resulted in observable improvements in teamwork, communication, adaptability, and leadership. Students exhibited the ability to work collaboratively in diverse groups, manage and resolve conflicts, and distribute responsibilities effectively. They demonstrated enhanced problem-solving capabilities, including the ability to plan,

execute, and evaluate experimental research tasks. Notably, students developed the skill to summarize and adapt research results for diverse audiences, including both technical and non-technical stakeholders.

3. Improved Intercultural Strategic Competence

Exposure to intercultural communication scenarios fostered students' strategic competence, equipping them to adjust their communication styles in multicultural and multilingual contexts. Role-play activities and international case studies allowed students to practice adapting their verbal and non-verbal communication strategies. This resulted in increased cultural sensitivity, which is critical in international collaborations and professional interactions.

4. Cognitive and Learning Outcomes

The design of the learning process, taking into account cognitive principles such as optimal cognitive load, active involvement, and the use of memory aids, proved effective. Students were able to retain and recall complex information, including technical terminology and procedures, with greater ease. The practice of integrating theory with hands-on application resulted in deeper comprehension of subject matter and stronger connections between concepts. Students reported that the practical orientation of tasks helped them better understand and remember the material.

5. Increased Motivation and Engagement

Active learning methods contributed to heightened motivation and engagement. Students expressed a sense of accomplishment from applying theoretical concepts to real-world problems and receiving immediate feedback. The visible progress in their language and professional skills reinforced their motivation to continue learning and participating actively in class. Many students also reported a sense of ownership over their learning process, further enhancing their engagement.

6. Readiness for Professional Challenges

The combination of technical knowledge and soft skills training prepared students for real-life professional situations. Their improved ability to communicate technical information, collaborate in teams, and adapt to various contexts positioned them to effectively handle the dynamic and complex nature of modern work environments. Assessments indicated a higher level of readiness for participating in international projects, competing for grants, and contributing to interdisciplinary teams.

7. Alignment with Labor Market Demands

Feedback from industry representatives and employers confirmed the relevance of the skills acquired. Students with a balanced set of hard and soft skills were noted to be more adaptable and better prepared for contemporary professional challenges. Employers highlighted the increasing importance of soft skills, including critical thinking, communication, and teamwork, alongside technical expertise.

Discussion

The findings underscore the importance of combining technical knowledge with soft skills in the training of technical university students. While traditional education often prioritizes hard skills, this study highlights the critical role of soft skills – including communication, adaptability, creativity, and collaboration – in preparing students for the evolving demands of the global workforce.

The results align with existing literature emphasizing the complementary nature of hard and soft skills. As technological advancements continue to reshape industries, soft skills become key differentiators that enhance employability and professional success. The integration of soft skills into technical education not only strengthens students’ professional competencies but also fosters the development of critical thinking and problem-solving abilities essential for innovation.

Moreover, the emphasis on an interactive language environment and intercultural communication provides students with a competitive advantage in international collaborations. By equipping students with the ability to navigate complex professional interactions, adapt to diverse

cultural settings, and contribute effectively to team projects, the approach addresses the challenges posed by the modern labor market.

In conclusion, this study demonstrates that the integration of soft skills into technical education, supported by effective learning methods and a focus on language competence, plays a pivotal role in the formation of well-rounded, professionally competent graduates who are prepared to succeed in the digital and global economy.

Conclusion

The use of the soft skill of effective learning in a technical university allows students to effectively form professional competencies. They not only learn to put their knowledge into practice but also develop communication skills, teamwork, self-organization, and other important skills for a successful career. (9,7)

Thus, soft skills play a key role in the successful adaptation and professional development of students of technical universities in the era of the digital revolution. They are a valuable addition to technical competencies and remain an integral part of success both in the work environment and in personal life.

The soft skill of effective learning is an effective way to form professional competencies among students of technical universities. It helps them not only to assimilate theoretical knowledge but also to learn how to apply it in practice, which is an important condition for successful professional activity.

Accordingly, learning technologies will be aimed at developing the abilities of a future specialist to carry out various types of activities, and in the process of carrying out activities, the student will master new competencies.

Conflict of interests. Correspondent the author states that there is no conflict of interest.

Ссылка на данную статью: Ospanova A.A., Juldikaraeva F.T., Ryskeldiyeva G.D., Tuyebekova Z.D. The use of a soft skill for effective learning to form professional competencies of students at a technical university // Вестник Казахского автомобильно-дорожного института = Bulletin of Kazakh Automobile and Road Institute = Kazakh avtomobil-zhol institutynyn Khabarshysy. 2024;2 (6):127-133. https://doi.org/10.63377/3005-4966.2-2024-13

Cite this article as: Ospanova A.A., Juldikaraeva F.T., Ryskeldiyeva G.D., Tuyebekova Z.D. The use of a soft skill for effective learning to form professional competencies of students at a technical university. Vestnik Kazahskogo avtomobil'no-dorozhnogoinstituta= Bulletin of Kazakh Automobile and Road Institute = Kazakh avtomobil-zhol institutynyn Khabarshysy. 2024;2 (6): 127-133. (In Rus.). https://doi.org/10.63377/3005-4966.2-2024-13

References

[12] Korotkov EG, Nosenko NV. The place of disciplines of the educational block "Foreign Language" in the system of formation of "hard" and "soft" skills among students of linguistic and non-linguistic specialties/areas of training. Sovremennye problemy nauki i obrazovaniya = Modern Problems of Science and Education 2020; 2. Available from: https://science-education.ru/ru/article/view?id=29606 (Accessed 23 February 2024).

[13] Kryukova GM. Formirovanie professional'noy kompetentnosti: kontekst tsivilizatsii [Formation of professional competence: the context of civilization]. Saint Petersburg: 2004, 452. (in Russ.).

[14] Kobeleva EP, Matvienko EN. Otraslevoe professional'noe obrazovanie: podgotovka budushchikh mezhdunarodnykh ekonomistov v transporte na baze inostrannogo yazyka [Branch vocational education: foreign language training of future international economists at a transport university]. Sibirskij pedagogicheskij zhurnal = Siberian Pedagogical Journal 2013; 3:137-140. (in Russ.).

[15] Sinelnikov B. Innovatsionnye podkhody k organizatsii nauchno-obrazovatel'noj deyatel'nosti v tekhnicheskom vuze [Innovative approaches to the organization of scientific and educational activities in a technical university]. Vysshee obrazovanie v Rossii = Higher Education in Russia 2007; 12:13-19. (in Russ.).

[16] Slesarenko NV. Formirovanie mul'tikul'turnoj sredy tekhnicheskogo vuza na primere obucheniya studentov elitnogo tekhnicheskogo obrazovaniya inostrannomu yazyku [Formation of a multicultural environment of a technical university on the example of foreign language training of students of elite technical education]. In: Inzhenernoe obrazovanie i nauka v global'nom obrazovatel'nom prostranstve = Engineering Education and Science in the Global Educational Space. Tomsk: TPU Publishing House; 2006, 255-260. (in Russ.).

[17] Pchelintseva IG. Realizatsiya kompetentnostnogo podkhoda pri obuchenii inostrannym yazykam v tekhnicheskom vuze [Implementation of a competence-based approach in teaching foreign languages at a technical university]. (in Russ.).

[18] Selevko GK. Kompetentsii i ikh klassifikatsiya [Competencies and their classification]. Narodnoe obrazovanie = Public Education 2004; 7:138-143. (in Russ.).

[19] Evidence-Based Training Methods: A Guide for Training Professionals. NAST Publications; 2010.

[20] Zakirova. Znachenie razvitiya myagkikh navykov u studentov tekhnicheskikh vuzov [The importance of developing soft skills among students of technical universities]. Digital Humanities and Technologies in Education (DHTE 2023). Available from: https://psyjournals.ru/nonserialpublications/dhte2023/contents/Zakirova (Accessed 23 February 2024).