



Expanding Demand for Master's Degree Programs in Interdisciplinary Studies in Education in Mongolia

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ABSTRACT

The fourth revolution of industrialization has enormously influenced the education sector and needs to be dynamic and sensible in light of the changeable requirements of employers. Specifically, higher education institutions (HEIs) must focus on the global labor market to offer an innovative curriculum and attract prospective students. One of the current trends in the higher education sector is to design interdisciplinary degree programs. The interdisciplinary master's degree program is relatively new in Mongolian tertiary education. Therefore, we aimed to identify the need for a master's degree program in interdisciplinary studies in education from the perspective of prospective students and also determine the areas of studies that have been preferred in the field of education. In this study, two online surveys and a focused-group interview were conducted. Three hundred ten educators were involved in the online surveys and focused-group interviews. The research questions were created on Google form, data was collected electronically, and focused group interviews were conducted simultaneously. The findings indicated that 52% of the prospective students preferred a master's degree program in interdisciplinary studies in education, and a diverse combination of areas has been demanded, in particular, education and modern teaching methodology (26.4%); teaching and linguistics (25.5%); education and international studies (23%) and, teaching and psychology (19.4%). The other important finding was that interdisciplinary studies would be able to provide the necessary knowledge and skills that make graduates competitive in the labor market.

INTRODUCTION

Higher education institutions (HEIs) in the period of the fourth industrial revolution are supposed to be innovative and creative to meet the demands of a changing workforce. In addition, new graduates have faced unexpected challenges that will be solved by innovative skills that modern employers look for in today's graduates. Several studies have determined the set of soft skills that are needed for the labor market. According to the [QS global employer survey \(2022\)](#), the skills employers deem important in new graduate hires are communication, teamwork, problem-solving, and flexibility. Regarding this result, HEIs should reconsider offering curriculum, programs, and delivery methods to incorporate 21st-century skills in great demand in an ever-expanding global workplace. This article will focus on master's

degree programs in education and their curriculum. In Mongolian tertiary education, the number of master's degree program students has gradually increased over the last five years of 2016-2021. There are several reasons for the increase in students. One of the influencing factors is the "skills gap" in the global market, and there have been mismatches between the curriculum of degree programs and employers' demands. Therefore, those who hold a bachelor's degree want to upgrade their knowledge and skills, and their first option could be to enroll in the master's degree program in their field of study. On the other hand, the "skills gap" is becoming a challenge in education industries worldwide. Because of this reason, HEIs have addressed the facing challenge and have taken some actions such as researching the labor market and employers' demands. As a result, the HEIs have started making specific changes in the content of the curriculum, delivering modes and organization of the training. However, according to the recent literature on this issue, HEIs can only train graduates to address some current and emerging challenges from a singular disciplinary source. Therefore, HEIs need to focus on interdisciplinary studies that can provide an opportunity to obtain flexibility and creativity for graduates.

LITERATURE REVIEW

In recent years, the environment of higher education has dramatically changed, and students are choosing the institution to study very carefully and considering all aspects of offering courses. Therefore, the university choice process is highly complicated for candidates ([Tamtekin Aydin, 2015](#)). In this framework, universities must re-examine their core task ([Holley, 2019](#)): competitive curricula and effective recruitment strategies. Several teaching development and programmatic models are described in the literature, including multidisciplinary, trans-disciplinary, cross-disciplinary, inter-disciplinary, and intra-disciplinary ([Bishop-Williams et al., 2017](#); [Mitchell, 2005](#); [Park & Son, 2010](#)). In this article, we chose to focus on the interdisciplinary dimension in light of the master's degree program in education. Since academic disciplines are commonly structured, the university curriculum and faculty are socialized to their respective disciplinary norms, and interdisciplinarity is a complex endeavor for colleges and universities ([Holley, 2017](#)).

Interdisciplinary is solving problems and answering questions that cannot be satisfactorily addressed using single methods and approaches. It is familiar, however; academic disciplines are flexible and have frequently been combined to form new fields to provide better answers to emerging questions ([Bridle et al., 2013](#)). Furthermore, societal, environmental, economic, and philosophical issues and challenges are often so complex that it is impossible to fully understand them from a single perspective or knowledge framework. However, multiple viewpoints can help draw from and leverage synergistic team efforts within higher education circles to address these broad and complex issues and challenges ([James Jacob, 2015](#)). Although no definitions of interdisciplinarity exist, this article defines that academic disciplines are flexible and have frequently been combined to form new fields to provide better answers to emerging questions ([Bridle et al., 2013](#)). In addition, interdisciplinarity is a means to address challenges and problems that a single discipline cannot solve in the revolution of the fourth industrial period.

On the other hand, there are several types of enterprise or soft skills that employers are looking for in today's graduates, particularly communication, teamwork, problem-solving, and flexibility ([QS, 2022](#)). In this case, HEIs need to support programs and courses that can train students to obtain those necessary skills. One of the solutions is to promote interdisciplinary programs because interdisciplinary programs draw from two or more academic disciplines that work together to create a powerful learning experience and emphasize integrative learning, critical thinking, and creative problem-solving. Furthermore, higher education leaders are reorganizing their academic infrastructure to find a better solution to compete in the rapidly changing business environment and high-tech society. Accordingly, there is a need to draw from multiple disciplines to provide the necessary training required for many degrees, including the postgraduate level. Degree programs in interdisciplinary studies are available at the bachelor and doctoral levels. The multidisciplinary course is essential for the future career of prospective students and improves the quality of education and research. Although HEIs have understood an emerging need to design interdisciplinary courses in higher education, many seem reluctant to encourage interdisciplinary initiatives because of their traditional perspectives. Therefore,

the researchers have pointed out that a paradigm shift is needed to support multidisciplinary studies, including interdisciplinary research, its pedagogy, and degree courses ([James Jacob, 2015](#); [Stember, 1991](#)). Regarding the paradigm shift, HEIs and other stakeholders, such as employers and students, are to foster engagement with interdisciplinary educational programs. Higher education trends are "from disciplinary hypothesis-based research to problem-based, interdisciplinary studies" ([Rudall & Espejo, 2011](#); [Rudall & Mann, 2010](#)). Based on current higher education practices, interdisciplinary programs refer to integrating two or more disciplines or fields of study. Furthermore, it can be implemented at a single university or between two or more HEIs ([Barry et al., 2008](#); [Bridle et al., 2013](#); [Graybill et al., 2006](#); [James Jacob, 2015](#)). Evidence shows the increase in two or more discipline-based degrees over the past 40 years. The types of degree programs vary substantially, but the list continues to grow ([Brint et al., 2009](#)). There are several different interdisciplinary studies. According to James Jacob, the most common interdisciplinary fields include organizational behavior, management, political science, public health, international studies, international development, human resource management, history, music, environmental studies, biomedical sciences, law, engineering, rural development, agro-physics, agro-chemistry, and energy studies. In addition to this, a growing body of research is focusing on interdisciplinary majors, degree programs, and innovative interdisciplinary programs among world-class universities ([James Jacob, 2015](#)); for instance, the role of interdisciplinary programs is expanding in the United States and across the globe ([A. Scott, 2014](#)). There are several interdisciplinary master's degree programs at Mongolian universities, most of which are in liberal arts. It could be related to why liberal art schools must adapt to change; nowadays, they are gradually doing so ([Bonvillian & Murphy, 2014](#)). HEIs need to go into this adaptation as soon as possible because of the demands of the digital society and the competition in the educational market simultaneously. In this framework, solid empirical studies are needed to determine the benefits of interdisciplinary and disciplinary teaching development programs to contextualize and operationalize the attributes and nature of teaching and learning in both settings ([Spelt et al., 2009](#)).

Moreover, it should be noted that interdisciplinary programs are fruitful for students and researchers from different backgrounds and institutions to work together on critical issues to achieve more tangible results. Interdisciplinary research and collaboration can provide substantial benefits to scientists, practitioners, and policymakers, and the future of research is predicted to be increasingly interdisciplinary ([Bridle et al., 2013](#)). Recent literature on interdisciplinarity highlights interdisciplinary research and training initiatives, best practices, and reviews ([Rhoten & Parker, 2004](#)). Therefore, HEIs must brainstorm interdisciplinary studies and how they should be reflected in master's degree programs. It is more than just the issue of combining or mixing several studies and subjects. Instead, it will be collaborative teamwork, including related stakeholders, particularly university administration, lecturers, researchers, students, and employers.

Furthermore, there should be joint research in designing and delivering the curriculum. The reason for highlighting teamwork is related to the features of disciplinary studies. In other words, interdisciplinarity demands the collaboration of different subject teachers, and it may be implemented between two or three universities. Therefore, collaboration among researchers in multiple disciplines is the key to interdisciplinarity. The agencies responsible for research and innovation should fund interdisciplinary research initiatives to make the collaboration real and fruitful ([Lyll & Meagher, 2012](#)). Ten key characteristics are essential for a successful interdisciplinary team ([Nancarrow et al., 2013](#)) such as 1) Leadership and management; 2) Communication; 3) Personal rewards, training, and development; 4) Appropriate resources and procedures; 5) Appropriate skill mix; 6) Climate; 7) Individual characteristics; 8) Clarity of a shared vision; 9) Quality and outcomes; and, 10) Respecting and understanding roles. HEIs must set up a team to design and implement interdisciplinary programs based on these characteristics. Moreover, the collaboration is not only between academics and prospective students; administration, researchers, and other stakeholders will be part of the main interdisciplinary activities. Furthermore, all levels of academia would benefit from interdisciplinary programs such as cultivating ideas, concepts, and skills ([Bridle et al., 2013](#)), and it will improve group dynamics development ([Boix Mansilla & Duraisingh, 2007](#)). However, in some instances, some traditional attitudes and cultures have discouraged interdisciplinary studies and programs in higher education; extensive research and practical evidence have proved that it is time to reevaluate the conventional master's degree programs, and HEIs need to shift into interdisciplinarity.

METHODS

Design

This study used a mixed-methods design involving collecting and analyzing quantitative and qualitative responses from online-based surveys and focus group interviews. The questionnaires were created online to gather prospective students' perceptions of interdisciplinary master's degree programs in education and the knowledge and skills in great demand. The Google form was used to collect data on the prospective students' perceptions and necessary knowledge and skills in their workplaces. The first survey consisted of 8 questions intended to investigate the participants' academic goals, lifelong learning, and views on the current master's degree programs offered by Mongolian universities. The second survey included 15 questions about knowledge, skills, and competencies to adapt to change and diverse settings.

Participants

There were two different surveys in this research. The participants in this study (n=310) were teachers in Mongolian secondary schools and universities and were randomly selected. Survey 1 included a total of 216 participants, and they were recruited through social media and emails. The participants were the teachers, school principals, social workers, and psychologists who intend to do a master's degree in the coming five years. They participated in different levels of Mongolian educational sectors, such as secondary schools, vocational education centers, and universities. The majority of them, 84.7%, was from public secondary schools, 9.7% was from private secondary schools, 2.8% was from vocational education center, and another 2.8% was from universities. Survey 2 covered a total of 94 participants who were working in the education sector as teachers and expressed their needs to improve in light of their workplace demands.

RESULTS

The questionnaires asked the participants to answer questions regarding their perceptions of master's degree programs. In addition, there were several open-ended questions where they could express their views in detail. The first question clarified whether the teachers and staff in the educational sector need to study in master's degree programs and whether they have any plans for the next five years. According to this question, 68% of participants plan to study for master's degree programs in the coming years. It has shown that those who are working educational sector need to upgrade their knowledge and skills. Therefore, it is vital to identify if prospective students have already chosen universities to do their master's degree. Their answers would be essential for us to analyze what factors influence the decisions on university choice and what they expect from universities. Several universities in Mongolia offer master's degree programs in education. Therefore, in the next question, we would like to find out about their choice of universities to do their master's degree in the field of education.

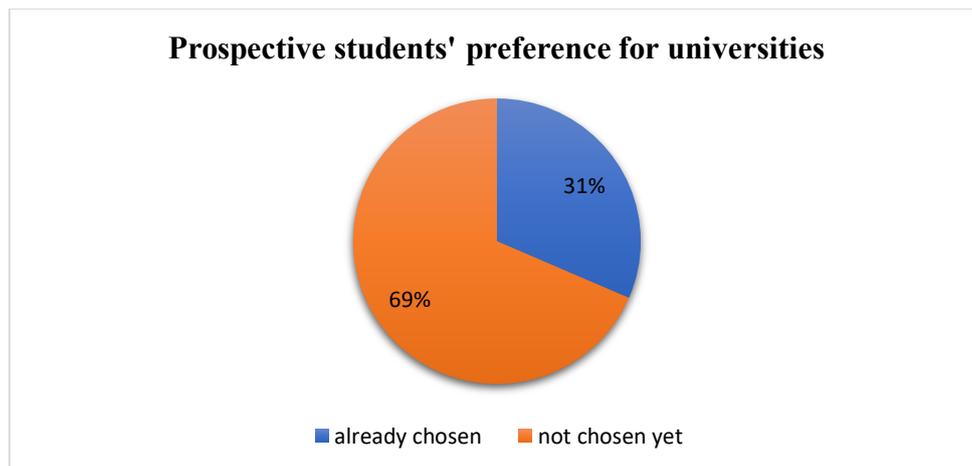


Figure 1. Prospective Students' university choice decision

Based on the results, 69% of participants have yet to choose universities, so the research participants are researching the potential HEIs and comparing their curricula. Those who intend to do a master's degree are comparatively different from those who are choosing a bachelor's degree because they have gained a lot of work experience and have already defined their goals and demands. In this case, choosing a university is very important for prospective master's degree program students. From the results, it can be predicted that they are still researching more suitable universities and comparing their advantages. Therefore, HEIs need to re-examine their curricula and programs and approach those who still need to make decisions. To find out what the prospective students expect from the universities, we need to focus on factors that influence the choice of universities. According to previous studies, the influencing factors are the importance of quality and flexibility in degree/course combinations, accommodation availability, cost, and proximity to home (Holdsworth & Nind, 2006). In addition to this, fourteen decisive factors have been determined. Based on their research, employability, curriculum, academic reputation, faculty, and research environment are the most critical elements in university choice (Ho & Hung, 2008). Therefore, our next question aimed to determine what factors influence their decisions.

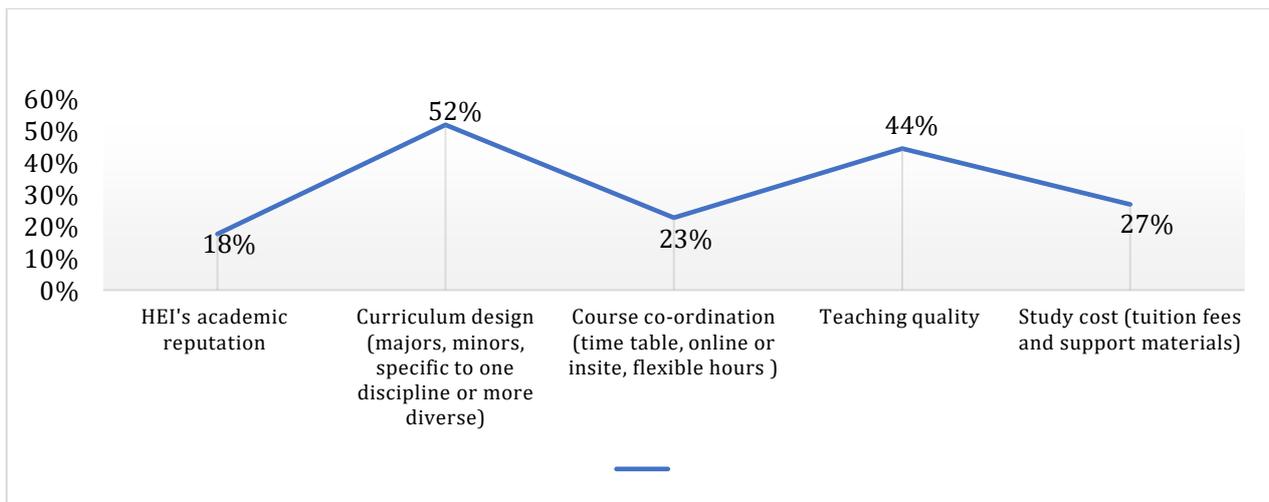


Chart 1. Influence variables in HEI selection rate

According to Chart 1, the most crucial factor in the HEI selection rate was the curriculum design which was 52%. Regarding the curriculum design, the participants focused on more in-depth issues, such as the majors and minor courses and whether the major is specific to only one discipline or more diverse. Furthermore, we can see that prospective students are seeking master's degree courses that will be able to improve their lifelong and professional skills and knowledge because mixed or more complex skills are needed in the labor market.

Based on the graph, the second important factor is teaching quality, which is 44% of all participants. Teaching methods and skills are always central to the educational sector and this period. Nowadays, the teachers delivering subjects of the master's degree course should be skillful, lifelong learners and initiative because the prospective master's degree course students have already gained much experience in their field, and they will expect a higher level of knowledge and skills from their teachers. As a result of this survey, HEI's academic reputation could have been more important than offering curriculum and delivering modes. It was the least important factor among other variables. However, in other studies, the institution's reputation is the most decisive criterion in the students' selection process (Walsh & Beatty, 2007). To sum up that question, participants concentrated on curriculum design, meaning that the curriculum and its content, design, delivery, and features should meet their demands. After the critical variables in the HEI selection have been identified, the next question is posed by the HEIs. In other words, HEIs need to clarify what types of master's degree courses will be demanded and how traditional methods should be converted into modern needs.

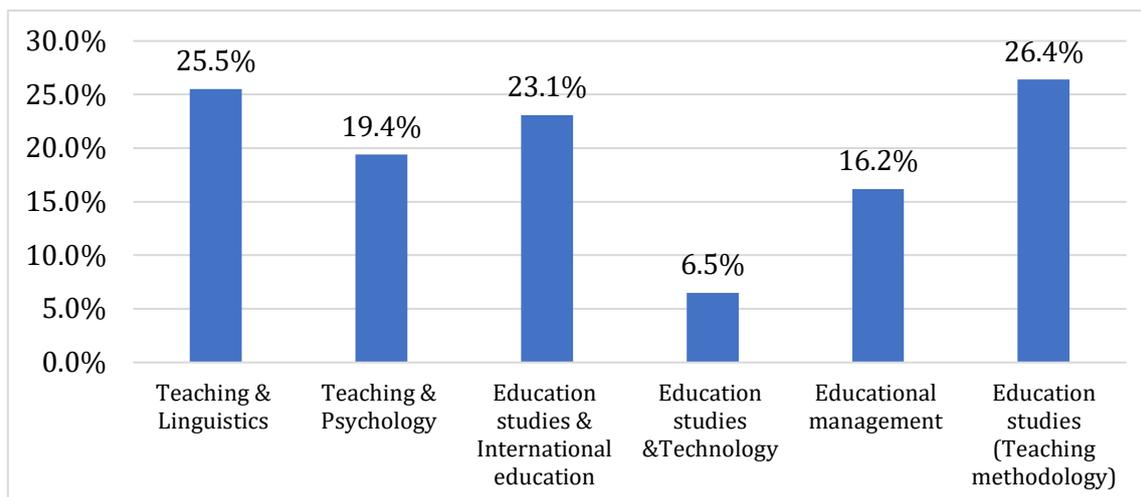


Chart 2. Preferences on Master degree programs' specialization

In this survey, most participants were public secondary school teachers planning to earn master’s degrees in education. The survey provided an opportunity to combine preferred courses as they wished to study in the future. Based on the results, it was seen that 26.4% of participants preferred to focus on education studies and teaching methodology, 25.5% chose teaching and linguistics, and 23.1% was for education studies and international education. Accordingly, the most preferred three interdisciplinary courses are education studies, modern teaching methods, and the issues related to international education. Although they were not ranked in the top three courses, the participants attracted other potential interdisciplinary approaches such as teaching and psychology, education studies, and technology, 19.4% and 6.5%, respectively. This result proved that the modern needs and demands in postgraduate courses are changing dramatically. Therefore, the HEIs should consider these changes seriously when they design new courses. Regarding the needs of the prospective students, HEIs should clarify the skills and competencies demanded in the workplace and labor market because future students will want to upgrade their skills and knowledge in light of modern society’s requirements. Therefore, we aimed to identify necessary knowledge, skills, and competencies in all education sectors because most survey participants were school teachers, principals, and social workers.

Table 1. Participants’ preference on the importance of gaining knowledge, skills, and competencies through interdisciplinary master’s degree program

| Knowledge, skills, and competencies | Very important for my job | | Important for my job | | No opinion | |
|---|---------------------------|------|----------------------|------|------------|------|
| | n | % | n | % | n | % |
| To obtain in-depth knowledge of course content and standards | 73 | 76.8 | 12 | 12.6 | 12 | 12.6 |
| To develop professional knowledge and skills | 82 | 86.3 | 6 | 6.3 | 9 | 9.5 |
| To obtain in-depth knowledge of modern teaching methods | 82 | 86.3 | 9 | 9.5 | 5 | 5.3 |
| To have the ability to use ICT skills for teaching | 85 | 89.5 | 8 | 8.4 | 4 | 4.2 |
| To obtain knowledge and understanding of teaching students with special needs | 63 | 66.3 | 7 | 7.4 | 24 | 25.3 |

| Knowledge, skills, and competencies | Very important for my job | | Important for my job | | No opinion | |
|---|---------------------------|------|----------------------|------|------------|------|
| | n | % | n | % | n | % |
| To obtain knowledge and understanding of students' age and psychological differences | 81 | 85.3 | 8 | 8.4 | 9 | 9.5 |
| To obtain knowledge and skills to work with students from multicultural backgrounds | 72 | 75.8 | 4 | 4.2 | 18 | 18.9 |
| To obtain knowledge and skills to counsel students on facing problems | 82 | 86.3 | 5 | 5.3 | 6 | 6.3 |
| To obtain knowledge and skills in curriculum design and development | 83 | 87.4 | 8 | 8.4 | 4 | 4.2 |
| To obtain knowledge of school management | 61 | 64.2 | 18 | 18.9 | 15 | 15.8 |
| To obtain knowledge of the relations between education, society, and economics | 65 | 68.4 | 12 | 12.6 | 16 | 16.8 |
| To obtain skills to do research and find a solution | 78 | 82.1 | 6 | 6.3 | 11 | 11.6 |
| To obtain knowledge and skills to use academic English, which is required to publish an article in international journals | 70 | 73.7 | 10 | 10.5 | 15 | 15.8 |
| To develop lifelong learning skills | 73 | 76.8 | 12 | 12.6 | 10 | 10.5 |

Table 1 shows 14 preferred concepts related to the knowledge, skills, and competencies chosen by the participants. The most demanded skills are ICT skills for teaching (89.5%), knowledge and skills of curriculum design and development (87.4%), professional knowledge and skills (86.3%), in-depth knowledge of modern teaching (86.3%), and knowledge and skills to counsel students who are facing problems (86.3%). Based on the top three demanded skills and knowledge, HEIs need to reevaluate their curriculum to determine whether their master's degree program in education has been able to provide such knowledge and skills. The master's degree courses in the field of education that Mongolian universities have offered have two major specializations, in particular, education studies and educational management. Each university's curriculum is different. However, the units in the curriculum are tightly developed in the framework of the two significant specializations. In this framework, students cannot simultaneously study educational psychology, ICT in education, and skills to work with special needs students and students from multicultural backgrounds. However, in this survey, the participants chose to study those skills and knowledge (working with special needs students for 66.3%, multicultural students for 75.8%) through a master's degree course in education.

The survey revealed that another vital skill that prospective master's degree course students chose was lifelong skills which made up 76.8%. At the same time, the participants expressed their wishes to conduct research in their field and publish results in international journals 82.1%, and 73.7%,

respectively. To summarize those three demanded skills, school teachers had already understood that they needed to develop themselves in workplaces during the fourth industrialization period. Another vital aspect of preferring one university is related to career development. Students' main goal is to be selected by the employer in the labor market, so they want to upgrade their skills and minimize risks in the employee selection process. In addition, the focused-group interview participants mentioned that it would be impossible for one master's degree course to provide all of this critical knowledge and skills for one and a half years. However, most of the survey participants were school teachers, so they had already studied the detailed information such as subjects, the content of the curriculum, and delivery modes of most Mongolian universities that offer master's degree courses in the field of education.

DISCUSSION

The relevant literature on interdisciplinary programs and studies focuses on their strengths and weaknesses from theoretical perspectives, and there is limited empirical research in this area. Therefore, our research addressed this gap and aimed at clarifying two specific questions, (1) whether there is a need to offer interdisciplinary master's degree programs in education studies at Mongolian universities and (2) which prospective students demand interdisciplinary courses. We have found a greater need to design interdisciplinary programs, particularly master's degree programs in the field of education, based on our research results. For example, 52% of all research participants said they would consider whether the HEIs offer one specific discipline or are more diverse in choosing universities. In other words, one of the primary criteria for selecting universities to earn a master's degree program is the curriculum that provides the necessary skills and knowledge to work in the global market.

Another important aspect is the employers' needs and future job requirements. For example, according to the QS survey, employers demand that new employees have more complex skills and competencies such as communication, teamwork, problem-solving, and flexibility. To meet these employers' requirements, HEIs must offer a curriculum to prepare skilled people who can be flexible and competitive in the changeable labor market. In this case, the curriculum HEIs will redesign could be interdisciplinary. According to the research results, prospective graduate students in education programs prefer interdisciplinary courses such as teaching and linguistics; education studies and teaching methodology; education studies and international education; education studies and technology; education studies and psychology. Based on these results, it has been concluded that future students will prefer interdisciplinary master's degree programs. Specifically, the multidisciplinary master's degree program in education is highly demanded by prospective students because, in this modern period, the education sector has faced many challenges. Therefore, teachers should be well prepared to solve them and initiate better solutions to those problems. Therefore, educators want to study in postgraduate programs to learn the necessary knowledge and skills. Finally, an analysis of the data suggests that interdisciplinary programs can deliver the knowledge, skills, and competencies the modern labor market demands. More than one specific discipline is needed to obtain the current abilities. Therefore, HEIs in Mongolia could consider these data in their master's degree program in education.

Limitations

The main limitation of this study is that it covers only one specific program, particularly the master's degree program in education. Moreover, given the nature of the research, it cannot be concluded that all prospective students in the postgraduate program are interested in an interdisciplinary program.

CONCLUSION

In the period of the fourth industrialization, there is increasing competition in the higher education sector and the global labor market simultaneously. This competition has influenced students' university choice decisions so that prospective students are paying much more attention to the curricula offered by the HEIs to select programs HEIs offer, particularly skills, knowledge, and competencies that will make students more flexible and creative. In the related literature, HEIs worldwide are considering such demands and needs and have already taken some actions. One of them is to design and develop

interdisciplinary programs at all levels of the education sector. Some universities have already started planning and delivering multidisciplinary programs. In Mongolia, HEIs have faced similar challenges, and two universities have been offering interdisciplinary programs at the postgraduate level. However, while there is growing literature on interdisciplinarity in higher education, a lack of research was observed in the interdisciplinary master's degree programs. Therefore, we aimed to identify prospective students' preferences for multidisciplinary master's degree programs in education and determine what interdisciplinary course combination is in great demand. During the research work, we have compared the concept of interdisciplinarity from theoretical and practical perspectives. Furthermore, quantitative and qualitative research was done to investigate prospective students' preferences.

According to our research results, HEIs should reevaluate their curriculum and offer programs to meet modern society's and employers' requirements. In addition, the knowledge and skills employers demand should be reflected in the HEIs' curriculum. Additionally, more than offering one specific major is needed to prepare competitive graduates in the period of Education 4.0. For example, in a master's degree program, general educational aspects could be combined with modern teaching methodology, technology, psychology, and international studies because the participants preferred these combinations in interdisciplinary courses. To sum up, it has proved that interdisciplinary master's degree course in education has been demanded by prospective students, potential employers, and modern society. Therefore, prospective students will choose HEIs based on the curriculum, which can prepare a competitive workforce.

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The authors declare no funding and conflicts of interest for this research.

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