ACTA UNIVERSITATIS AGRICULTURAE ET SILVICULTURAE MENDELIANAE BRUNENSIS

Volume LIX 9 Number 7, 2011

ANALYSIS OF EDUCATIONAL NEEDS OF STUDENT TEACHERS AT THE INSTITUTE OF LIFELONG LEARNING AT MENDEL UNIVERSITY IN BRNO

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Received: May 20, 2011

Abstract

DANIELOVÁ, L., JANDERKOVÁ, D., HORÁČKOVÁ, M.: *Analysis of educational needs of student teachers at the Institute of Lifelong Learning at Mendel University in Brno.* Acta univ. agric. et silvic. Mendel. Brun., 2011, LIX, No. 7, pp. 97–104

The paper is devoted to the results of the second stage of an internal research project, which has been implemented since 2008 at the Lifelong Learning Institute at Mendel University in Brno. Analysis of the educational needs of students undertaking the Bachelor degree in Specialization in Pedagogy was carried out by a questionnaire. The first part is devoted to the attitudes of student teachers to the graduate profile for the field of study, and the issue of the content of study programs is also addressed, with a focus on the practical component. The second part of the paper focuses on research into the professional skills of student teachers which are essential to the successful working life of graduates. This section describes in detail the significance of selected professional skills in relation to the graduate employment market. From a comparison of the results of the investigation, it can be concluded that students deemed the most important areas of professional competence to be proficiency in their own field and the ability to make meaning clear to others. The obtained data are interpreted and discussed in the context of similar studies performed in the Czech Republic and abroad. Based on the results of research, some substantive and methodological changes are proposed in the fields of teaching vocational subjects (UOP) and of teaching and training practical subjects (UPVOV).

internal scientific research project, teachers of vocational subjects, teacher training, research work, educational needs, professional competence, teaching and training practical subjects

Training needs are currently a much-debated area of pedagogy, related to the issue of improving the quality of education, training and the broad context of quality of life. Both at the start of professional life and during their career, people consider their options for a favourable job position. Interest in further development, personal skills, the degree and quality of previous education, current competition between the candidate's chosen field of study, family traditions, opinions of parents, guardians, teachers, educational and career counselors, and other factors influence their decisions. It is often the primary criterion for determining the optimal choice for a future prospect in the employment market. Prevents it is generally a low awareness of the evolution of the employment market in the near future, or a lack of awareness among interested parties concerning the available information regarding projected medium-term trends in the employment market. The current situation can particularly be blamed on the low level of activity on the part of the relevant national authorities as well as career guidance counsellors. The new generation of students has already assumed a broader profile with key professional skills which will facilitate a broader employment mobility and will ensure that acquired skills are less vulnerable in the face of future change. This issue has also been addressed since 2008 by the

Institute of Lifelong Learning at Mendel University in Brno (ILL MENDELU) in its internal scientific research project, "Analysis of educational needs of students at ILL MENDELU, given the opportunities at educational institutions and the requirements of practical experience". One of the specific tasks of this project is to assess the quality of undergraduate degree programs and educational programs for further training and guidance activities in ILL MENDELU through analysis of educational needs and the requirements of practical experience. The Bachelor's degree in Specialization in Pedagogy at the Institute of Lifelong Learning at Mendel University in Brno prepares students for the teaching profession in two fields of study: Teaching vocational subjects (UOP) and the Teaching of practical education and training (UPVOV). Applicants are students or graduates of colleges and secondary vocational schools specializing in agriculture, food, environmental studies, mechanization, economics, forestry, woodwork, gardening and veterinary studies. Classes are focused on theoretical knowledge in this study program but also on the practical skills required for employment as teachers in secondary vocational schools and secondary vocational colleges.

MATERIALS AND METHODS

Analysis of the educational needs of students on the Specialization Program in pedagogy was implemented through educational research in the form of a questionnaire. Students were presented with a questionnaire in electronic form with mostly closed questions. In the first part of the questionnaire respondents answered questions about study content, structure, and reasons for choosing a particular type of study. The second part included questions assessing the importance of key skills acquired through study, as well as a classification of these abilities, habits and skills. The research addressed 71 students studying the field of teaching vocational subjects (UOP) and 102 following the degree in teaching students practical learning and vocational training (UPVOV). The survey results are summarized in the contingency table The original intention was to analyze the dependence of qualitative features using square contingency. Independence chi-square test could not be used because more than 20% of the contingency table Field has the expected frequency of less than 5 and some fields have the expected frequency of less than 1 (Chráska, 2007). The comments of the research results were used selected methods of scientific work, particularly the method of quantitative analysis, comparison and interpretation of collected data. Theoretical basis for the formulation of the problem has been observed in the methods of obtaining the facts used indirect methods document.

RESULTS AND DISCUSSION

Students of the Bachelor degree in pedagogy, field of study Teacher Training in vocational subjects (UOP) and the Teaching and training practical subjects (UPVOV) participated in an online survey in the University Information System (UIS) of Mendel. The questionnaire of each respondent was included in a study to analyse the results, and each questionnaire, with its own code, contained a total of 23 questions. The first 9 (questions 1–9) were aimed at identifying student characteristics (ascertaining the field of study of respondents, their class and year of study, as well as their gender, age, level of education, length of work, residence and social group). The content of the other 14 questions investigated the attitudes of students to their field of study. 11 were semi-open questions (questions 10–19 and question 21), and 3 were open (question 20 and questions 22–23). Currently, across all years of study, there are more students undertaking combined study than full-time student in all years of education. Among the students there are more women than men. Of the 173 students who received the questionnaire, 90 of them completed it. 52% of questionnaires were returned. At the time of the survey, our university department had 71 students of Bachelor degree, 41 of them answered the questionnaire. 58% from this field of study returned the questionnaire. Description of the research sample is given in Table I.

Academic preparation of future teachers provides a basic knowledge base and skills that they can then effectively build up through experience in teaching practice. The teacher education programs are dominated by theoretical teaching rather than the practical. It should be remembered that students

I: *Description of research sample*

	number of students who received the questionnaire	number of completed questionnaires.	questionnaires. returned (%)	Form of studies		sex	
				full-time	comb.	male	female
UOP*	71	41	58	3	38	12	29
UPVOV*	102	49	48	19	30	13	36
celkem	173	90	52	22	68	25	65

Source: own results

**UOP = T*eaching vocational subjects *Teaching specialized subjects*

**UPVOV = T*eaching and training practical subjects *Teaching educational and practical training*

must be well-equipped with theoretical knowledge, which then supports their job performance once qualified, and which is difficult to obtain in further studies. Theoretical knowledge must however conform to the concept of the profession and must not be separated from the realities of the profession. In the research project *Development of national education and teacher education in the European context* (1999–2003) (Vašutová, 2004), three quarters of participating teachers stated that during their university studies they lacked the appropriate range of practical experience, whilst theory was dominant.

Two questions of the questionnaire (numbers 12 and 13) examined the students' attitudes to the content of the Bachelor degree Specialization in Pedagogy (UOP and UPVOV). The first, question number 12, asked about their opinion as to what extent the course profile corresponds to the demands of the current employment market. Their assessment was used to analyse the compatibility of graduate profiles with the requirements of the employment market.

The data in Table II show that almost 62% of UOP students agree that the profile meets the requirements of the graduate employment market, with a total of 24 respondents (61.54%) choosing variant [a] or [b]. Variant [a] (Yes, fully) obtained the highest response rate of respondents, being selected 14 times, accounting for nearly 36% (35.9%) of responses monitored. It is interesting to consider the findings that over half the respondents (54.55%) whose length of work experience is 6 years or more, considers the graduate profile of UOP to conform to the employment market.

The fact however remains that, according to their answers almost 36% of respondents (UOP) felt themselves unable to assess the compatibility of the graduate profile with employment market demands (35.9%). It may be noted that the data analysis yielded by the responses to question 12 of students from each field of study – Teachers vocational subjects, and Teaching and training practical – can be considered to be similar. The majority of students from both disciplines are of the view that the profiles of graduates of their courses correspond at least partially to employment market requirements. This was expressed by almost 62% of UOP students and 73% of UPVOV students. Likewise, we can't overlook the fact that many of these, nearly 36% of UOP and 27% of UPVOV students, were not able to assess this fact.

The second question which was devoted to analyzing the issue of graduate profile was question number 13. It tested the attitudes of respondents towards the relevance of subjects studied in relation to graduate profile. Table III presents the final overall evaluation of the data obtained from question number 13.

According to the results obtained it is clear that half the respondents from both fields of study are convinced that passing subjects covered by the program will only partly serve to gain the knowledge and skills listed in the graduate profile. Only 20% of UOP respondents believe that on graduation they will have fully achieved the expected graduate profile. The results obtained from UPVOV respondents found that a somewhat more optimistic stance prevails. Up to 33% of respondents believe unconditionally in the acquisition of skills and abilities in the profile of graduates. It cannot be ignored that nearly 21.5% of respondents from both fields of study cannot assess the situation. The question therefore remains as to whether the reason for this response is simply unawareness of

II: *Attitudes of students to the issue of the profile of graduates of the bachelor degree Specialization in Pedagogy (See survey question 12)*

Each answer	UOP	UOP %	UPVOV	UPVOV %	Σ	%
Yes, fully	14	35.90	8	20.00	22	27.85
Yes, but partly	10	25.64	21	52.50	31	39.24
No, the situation is different	0	0	1	2.20	1	1.,27
I can not judge	14	35.90	9	22.50	23	29.11
Not at all	1	2.56	1	2.50	2	2.51
Total	39	100.00	40	100.00	79	100.00

Source: own results

III: *Attitudes of respondents towards the relevance of subjects studied in relation to graduate profile (Question 13)*

Each answer	UOP	UOP %	UPVOV	UPVOV %	Σ	%
Yes, fully	8	20.00	16	33.33	24	27.27
Yes, but partly	21	52.50	22	45.83	43	48.86
No, the situation is different	1	2.50	0	0	1	1.14
I can not judge	9	22.50	10	20.84	19	21.59
Not at all	1	2.50	0	0	1	1.14
Total	40	100.00	48	100.00	88	100.00

Source: own results

IV: *Reported response rates to the issue of obtaining a comprehensive knowledge of the theoretical structure of professional disciplines (survey question 14)*

Each answer	UOP	UOP %	UPVOV	UPVOV %	Σ	%
Yes, fully	16	40.00	26	53.06	42	47.19
Yes, but partly	23	57.50	21	42.86	44	49.44
No, the situation is different	1	2.5	0	0	1	1.12
I can not judge	0	0	1	2.04	1	1.12
Not at all	0	0	1	2.04	1	1.12
Total	40	100.00	49	100.00	89	100.00

Source: own results

V: *Reported response rates to the issue of obtaining a comprehensive range of practical skills and habits of professional disciplines (question 15)*

Each answer	UOP	UOP %	UPVOV	UPVOV %	Σ	%
Yes, fully	6	14.63	16	32.65	22	24.44
Yes, but partly	29	70.73	28	57.14	57	63.33
No, the situation is different	1	2.44	2	4.08	3	3.33
I cannot judge	2	4.88	2	4.08	4	4.44
Not at all	3	7.32	1	2.04	4	4.44
Total	41	100.00	49	100.00	90	100.00

Source: own results

VI: *Reported response rates of students on the interrelationship of theoretical knowledge and practical skills in the chosen field of study*

Each answer	UOP	UOP %	UPVOV	UPVOV %	Σ	%
Yes, fully	8	21.62	21	43.75	29	34.12
Yes, but partly	25	67.57	21	43.75	46	54.12
No, the situation is different	3	8.11	5	10.42	8	9.41
I can not judge	0	0	0	0.00	0	0.00
Not at all	1	2.7	1	2.08	2	2.35
Total	37	100.00	48	100.00	85	100.00

Source: own results

the contents of the graduate profile, or whether the respondents cannot see the link between the school subjects studied and the skills listed in the graduate profile.

Question 14 focuses on the opinion of respondents about the issue of obtaining a comprehensive knowledge of the theoretical structure of professional disciplines at the end of the chosen field of study. Table IV contains the assessment of response obtained by evaluation of question 14.

As is apparent from Table IV UOP students and UPVOV students are predominantly satisfied with regards to obtaining a comprehensive knowledge of theoretical structure in their studies (39 responses from 40 UOP students and 47 of the 49 UPVOV students). UOP students are indeed satisfied, but there is still only partial satisfaction (23 only partially satisfied, 16 fully satisfied), whilst UPVOV students are predominantly fully satisfied (26 fully satisfied compared with 21 partially satisfied).

In question number 15, respondents were asked how confident they were that at the end of their chosen field of study they would have gained a comprehensive range of practical skills and habits of professional disciplines. Observed relative and absolute frequency of respondents' answers to this question are reported in Table V.

The vast majority of students of both types of study who completed the questionnaire is satisfied that they will obtain a comprehensive range of practical skills and habits. However, in both fields of study full satisfaction is expressed less often than partial satisfaction, as shown in Table V (29 UOP students are partly satisfied, 6 fully satisfied. 28 UPVOV students are partly satisfied, 16 completely satisfied). This illustrates the fact that students wish to strengthen the practical side of teaching, which would prepare them for real life situations which require the employment of practical skills. It is not enough just to have a good knowledge base, but real skills must be developed and trained. Together with the above knowledge, these skills form the basis of essential competency for the teaching profession.

Satisfaction is also the predominant response to the issue of the interrelationship of theoretical knowledge and practical skills in the chosen field of study (Table VI). For UOP students, partial

satisfaction prevails (25 partially satisfied, 8 completely satisfied). The UPVOV students are more satisfied, but there is an equal response for full and partial satisfaction (21:21). In both fields of study the number of students who are disappointed is increased. This illustrates the fact that students require the strengthening of the practical aspects of teaching which would prepare them for the specific situation of teaching practice. This fact is necessary to respond directly to suggestions and innovation sector, which are designed to work within our application for re-accreditation.

A successful professional graduate life is dependent on so-called key skills being obtained. These can be perceived as a culmination of knowledge, skills, abilities, attitudes and values. In addition, these allow the individual to develop their personality, as well as facilitating existence in the broadest sense, both in personal and professional life. The phrase '"core competency" is currently a common term also used for communication in the European Union and OECD.

The following skills are recognised, inter alia, to be key:

- learning skills,
- problem-solving skills,
- communicative skills,
- social and personal skills,
- civic skills,
- work skills.

(Wikipedia.org [online] 20. 9th 2010 [cit. June 28, 2010]).

The issue of competence is closely linked to the issue of training productivity. In this respect, the concept of competency is introduced to reflect the extent to which individuals fulfil the requirements in different areas. Competence is thus a central concept of empirical studies, dealing with the productivity of educational systems. It is also used in the framework of the experiment for example to assess different strategies in such comparative studies. In modern industrial society it is no longer really possible to describe education and skills as a fixed canon of professional knowledge that is passed to new generations. Knowledge must be applicable to other (new and complex) situations and contexts. Whatever an individual learns must be followed by other independent learning. In addition, connected and applicable obtained knowledge become the new educational objectives and application skills, including negotiation of separate self-learning, problem solving, and social and communicative skills. Competence is thus a central concept for target-setting in training, first in continuing and professional education, and then in basic school and gymnasium and university education. (Maag-Merk, Hartig: 2010)

In connection with the education of teachers it is important to mention the pedagogical knowledge referred to by Švec (2005). He obtained interesting results when comparing the views held by student teachers and novice and experienced educators concerning the importance of pedagogical knowledge. Student teachers consider it important to have some knowledge of pedagogical theory, particularly social communication and pedagogical-psychological knowledge. They are likely to experience wide gaps in their knowledge in the field of psycho-pedagogy. A similar trend is evident for new teachers, whose pedagogical knowledge is not wide enough to deal with the spectrum of educational situations which are encountered in practice. They experience particular deficiencies in using their teaching skills to solve educational problems with students. Experienced teachers emphasize the importance of a more comprehensive and broader, more widely usable pedagogical knowledge (eg empathy, management skills, use of teaching skills to solve problems and situations). The author is surprised that students and teachers ignore the metacognitive knowledge related to assessing and improving their teaching. Findings highlight the apparent lack of development of pedagogical knowledge in undergraduate education, and even in teacher education, despite the increasing importance of metacognitive knowledge. Such knowledge makes it possible for individuals to improve themselves, while helping to improve the teaching of student teachers and teachers themselves. Švec lists: [a] pedagogical-psychological skills – working with the curriculum in relation to pupils' learning; [b] diagnostic skills – students learn to recognise the personality of individuals and the class and to respond to the results of such diagnostics and to assess the skills of pupils; [c] knowledge of how to choose and use appropriate activity methods and forms of teaching; [d] knowledge of how to organise students' activities in the lesson, or in other forms of instruction; [e] knowledge of how to adequately respond to unplanned, non-standard teaching situations.

Musil, J. V. (2001) describes the educational and psychological aspects of educational competencies. He gives an overview of the areas addressed in the psychology of education, which affect the creation of content of teaching disciplines, which are to be studied by prospective teachers. He prioritises: [a] communicational requirements, forms and methods in the educational process, communication during the educational process in the educational environment, particularly focusing on nonverbal forms of the communication act, holding; [b] self-reflection on the part of educators (teachers and trainers) as well on the part of those being educated, as a source of educational activities; [c] methods of educational activities in terms of the psychological process of interaction and effect; [d] analysis and evaluation of educational phenomena; [e] educational problem behaviour; [f] the effective use of educational methods; [g] techniques of teaching knowledge and evaluation of adaptation and adjustment of school students; [h] educational objectives from an educational-psychological

VII: *The order of importance of selected areas of professional skills of ILL graduates*

Selected components of professional skills of ILL graduates	Total points	
	UOP	UPVOV
Proficieny in thein own field	79	136
Knowledge of foreign language	0	13
Ability to make decisions	19	28
Ability to solve problems	67	130
Ability to explain meaning to others	93	95
Ability to take responsibility	14	22
Adaptability and flexibility	39	30
Teamwork	23	31
Using computer technology	8	4
Presentation skills	82	58
Willingness to undertake further education	35	80
Communications skills	32	25
Ability to learn	21	38
Understanding of sources of information	14	11
Knowledge of legislation within their sector	45	30

Source: own results

perspective; [i] economic-social relationships in the educational environment (school classroom, after school center, clubs) and their place in the educational climate and atmospheric environment; [j] teaching styles of teachers and their effectiveness in the educational process.

The second part of the questionnaire was also aimed at research into professional competence of student teachers. In questions 17, 18 and 19 of the questionnaire, from the 15 options offered respondents could choose the five that best match their perceptions of the most important qualities of a teacher. Students selected and sorted what they believed to be the five most and least important areas of knowledge, skills and competencies that a graduate of their own field of study should acquire. Each respondent selected their answers from the options available and rated them on a scale of 5 to 1 points. So, each of the options received an overall score, which represented the weight of the variants. The following options were offered: proficiency in their own field; knowledge of foreign languages; ability to make decisions; problem solving skills; ability to make meaning clear to others; the ability to take on responsibility; adaptability and flexibility; teamwork; use of computer technology; presentation skills; a willingness to undertake further education; communication skills; learning ability; understanding of sources of information; knowledge of legislation within their sector. The order of importance of selected areas of professional skills of graduate teaching is given in Table VII.

Based on the evaluation of the data provided to us by respondents, we can say that UOP graduates consider the most important components of professional skills to be the following group of 5 (awarded 93–45 points):

- the ability to make meaning clear to others,
- presentation skills,
- proficiency in own field,
- ability to solve problems,
- knowledge of legislation within their sector.

UPVOV respondents consider the most important components of professional skills to be the following group of 5, (awarded 136–58 points):

- proficiency in own field,
- ability to solve problems,
- the ability to make meaning clear to others,
- willingness to undertake further education,
- presentation skills.

On the basis of their response, it may be assumed that in their opinion the indicated qualities should be the most developed part of their undergraduate degree.

Question 18 asked the respondents to try to estimate their own level in selected areas of professional competence. Self-assessment of students is given in Table VIII.

From the obtained results, it can be concluded that both UOP and UPVOV respondents' self-evaluation of the selected components of professional competence is almost identical. Among the best-rated skills the following appear: willingness to undertake further education; teamwork; communication skills, and adaptability and flexibility. Respondents from the UPVOV specialization rate themselves to be better only at team work, but otherwise their self-assessment is always slightly lower than that of the UOP respondents.

VIII: *Classification of selected areas of teachers' own professional competence (question 18)*

Selected areas of professional competence of ILL graduates	Average mark	
	UOP	UPVOV
Proficiency in their own field	2.3	2.2
Knowledge of foreign language	3.1	3.1
Ability to make decisions	2.4	2.5
Ability to solve problems	2.1	2.1
Ability to explain meaning to others	2.1	2.4
Ability to take responsibility	2.2	2.1
Adaptability and flexibility	1.9	2.2
Teamwork	1.9	1.8
Using computer technology	2.0	2.3
Presentation skills	2.2	2.5
Willingness to undertake further education	1.6	2.0
Communications skills	1.9	2.2
Ability to learn	2.3	2.4
Understanding of sources of information	2.4	2.5
Knowledge of legislation within their sector	3.3	2.9

Source: own results

Respondents are most critical of their professional skills in foreign language learning and their understanding of legislation within their sector. Language ability has a particularly striking low rating among UOP respondents, where it is expected that graduates of higher education will have more problems with the active use of foreign language. The poor rating regarding understanding of legislation within their sector may be associated with the low ratings they gave to their understanding of sources of information. Legislation within the sector goes through constant changes, so if respondents can't understand the range of sources of information available to them, they will probably find it difficult to search for and record changes in the relevant legislation. In question 19, students were asked to choose and sort their five least important areas of knowledge, skills and competencies that a graduate of their field of study should acquire. The fifteen different options of knowledge, skills or abilities were analogous to previous questions.

Responses to question 19 were evaluated in the same way as question 17 on the questionnaire. Table IX clearly shows that the students considered

IX: *The least important areas of knowledge, skills and abilities, according to students of the Specialization in Pedagogy Bachelor degree (question 19)*

Areas of knowledge, skills and abilities	Total points	
	UOP	UPVOV
Proficiency in their own field	30	28
Knowledge of foreign language	89	69
Ability to make decisions	22	24
Ability to solve problems	29	32
Ability to explain meaning to others	12	24
Ability to take responsibility	15	20
Adaptability and flexibility	39	89
Teamwork	57	38
Using computer technology	95	110
Presentation skills	20	47
Willingness to undertake further education	28	36
Communications skills	10	15
Ability to learn	25	38
Understanding of sources of information	40	46
Knowledge of legislation within their sector	20	21

Source: own results

the use of computer technology, foreign language learning and teamwork to be the least important (UOP students). UPVOV students rate the use of computer technology, adaptability and flexibility, and knowledge of a foreign language as the least important skills. It can be assumed that the knowledge, skills and abilities that are rated as the least important are considered by students to be more or less self-evident and need not be subject to any major change on their course of study.

SUMMARY

Training future teachers at university is constantly scrutinised, not only by students, academic personnel preparing future teachers, curricula and assessment teams, and expert staff from the Ministry of Education, but also by a range of scientific research. The aim of the Institute of Lifelong Learning at Mendel University is, on the basis of its own research and content analysis of the existing bachelor's degree programs, to upgrade teacher training colleges in correlation with the changing demands of the teaching profession. College preparation should be more focused on gaining practical skills that relate to theoretical knowledge. It should be remembered that students must be well equipped with theoretical knowledge, which should subsequently support their professional performance once qualified, and which they will not be able to gain in later training. However, this theoretical knowledge must correspond to the concept of the profession and must not be isolated from the professional reality. The aim is to improve the quality of teaching in teacher education to include subjects which will allow teachers to better understand the educational reality of students, to solve problems and to get adequate practical experience. This research shows that the majority of students on the Specialization in Pedagogy bachelor program are satisfied with the course content. However, in some cases only partial satisfaction prevails when students feel a degree of inadequacy in particular regarding the practical experience and skills they have gained. Currently, teacher education programs favour the teaching of theory over practical teaching. Also, evaluation of selected areas of the professional skills of students on the Bachelor's degree program shows that the best- and worst-rated areas of the professional skills of students on both Bachelor's degree programs are almost identical. The highest-rated include the willingness to learn and undertake further education; teamwork, and communication skills. The biggest weakness of the students was perceived to be in foreign languages, understanding of sources of information, and also their understanding of legislation within their sector. The reason for this negative evaluation may be to some extent the fact that legislation in the sector is undergoing constant change, and if students can't understand sources of information, then they will be unable to search for and register changes in the relevant legislation.

Acknowledgements

Results are published in the paper as a part of the project, *Innovative system of employee preparation in research and development* (project number CZ.1.07/2.3.00/09.0041), conducted as part of the operational programme *Education for Competitive Advantage*, financially supported by the Czech Ministry of education, youth and sports, and the EU.

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