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Evaluating teaching proficiency among teacher preparation diploma graduates based on InTASC standards

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ABSTRACT

This study aimed to evaluate teaching proficiency of graduates from the higher diploma in teacher preparation program (HDTPP) in Jordan based on the interstate teacher assessment and support consortium (InTASC) standards. To achieve the study objectives, a descriptive quantitative analytical approach was employed. Further, a rating scale was developed covering four domains: learner and learning, content, teaching practices, and professional responsibility. After verifying the validity and reliability of the study instrument, it was distributed to a sample of 686 teachers. The findings revealed that overall teaching proficiency was medium. Further, teaching proficiency across the key domains (learner and learning, content, teaching practice, and professional responsibility) were medium. No statistically significant differences were related to gender. However, there were significant differences related to specialization. Mathematics teachers showed the lowest levels of proficiency. Priorities for improvement were revealed in the "learning differences" standard. The study recommends strengthening teachers' understanding of individual differences and cultural diversity and applying this knowledge to foster inclusive classrooms. This can be achieved by designing ongoing professional training programs that focus on differentiated teaching strategies and managing diverse learning environments. This will contribute to increasing teaching efficiency and effectively meeting the needs of all learners.

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1. INTRODUCTION

The importance of educational evaluation lies in the significant implications of the decisions it informs. These decisions directly and indirectly influence the development of future generations. Educational stakeholders rely on evaluation the outcomes to guide improvements in current educational practices, transforming them to align with desired standards. A teacher's mastery of professional competencies is a cornerstone of high-quality education and a key driver of students' cognitive growth [1]. Consequently, it is essential to continuously assess teacher preparation programs (TPPs) and use the resulting insights to refine and modernize them [2]. This ensures alignment with evolving curricula, pedagogical methods, and assessment strategies, as well as with the shifting roles and expectations of teachers [3]. Ongoing evaluation

supports the development of programs that better equip teachers to understand and fulfill their roles with confidence and proficiency [4].

The teacher preparation process is defined as a structured sequence of activities and experiences through which prospective teachers develop their knowledge, skills, and teaching performance, aligned with advances in scientific and behavioral knowledge [5]. A TPP, as described by Boogren [6], is a formal initiative developed by institutions responsible for training individuals aspiring to enter the teaching profession. Cárceles *et al*. [7] emphasized that TPPs support the acquisition of essential teaching skills and the development of teachers' professional identity and capabilities. Furthermore, Hollins and Warner [8] highlighted that effectiveness of these programs cultivate environments that promote sustainable professional development. They foster specialized, pedagogical, and cultural competencies; enhance teachers' proficiency in using information and communication technologies; and encourage a scientific approach to problem-solving, critical thinking, and innovation [9]. Additionally, these programs aim to prepare teachers to undertake a wide range of teaching tasks and to make optimal use of material and human resources [10].

Competency-based TPPs have emerged from the broader movement advocating for performance-centered approaches in teacher education [11]. Kim and Zak [12] defined competencies as a structured sequence of activities that learners must engage in progressively to develop the abilities necessary for effectively fulfilling tasks central to their personal and professional lives. The significance of these competencies lies in their direct connection to learners' capacity to perform essential duties proficiently [13]. According to Kuo [14], competency-based TPPs are designed to equip prospective teachers with the knowledge and skills required to address diverse students learning needs. These programs are grounded in a clearly defined conception of the teacher's role and responsibilities.

Hollins and Warner [8] noted that since the early 1990s, there has been a growing interest among educators in adopting a standards-based approach in teacher preparation. This approach has informed the development of professional licensing systems, guided the design of professional development programs, and served as a foundation for performance assessment. As such, professional standards have become central to shaping all policies and procedures aimed at improving teacher quality. Heflebower *et al*. [15] emphasized that standards-based assessment plays a critical role in teacher preparation.

Marzano [16] asserted that professional standards for teacher preparation offer a unified framework for teaching practices grounded in shared professional values and beliefs. These standards also serve as evaluative tools for making informed professional judgments. According to Carinci *et al*. [17], several countries have adopted professional standards in teacher preparation for a range of purposes, including licensing new teachers and renewing the credentials of practicing educators. While there is considerable overlap in the structure and intent of these standards across countries, notable differences exist to accommodate specific national or local educational priorities [18].

Among the developed countries that have emphasized the development of professional standards for teacher preparation is the United States. According to the Council of Chief State School Officers [19], the National Council for Professional Education Standards was established to advocate for performance-based teacher evaluation. In 2011, the council introduced professional standards for teacher preparation, which were updated in 2013 to better address the evolving needs of teacher education. These updated standards became known as the interstate teacher assessment and support consortium (InTASC) standards. The InTASC standards are defined as a comprehensive set of educational performances encompassing the knowledge and competencies that novice teachers must demonstrate. The framework includes four main domains, 10 core standards, and 33 performance indicators. First, the learner and learning, this domain includes three standards: learner development, learning differences, and learning environments. These standards evaluated through nine performance indicators. Second main domain is content knowledge. It comprises two standards: content knowledge and content application. This domain is assessed using six performance indicators. Third, teaching practice, this domain involves three standards: assessment, planning for instruction, and instructional strategies. It is measured by eleven indicators. Fourth, is about professional responsibility domain that includes two standards: professional learning and ethical practice, and leadership and collaboration. This domain is evaluated through seven indicators. The standards collectively provide a clear, measurable framework for assessing and supporting the effectiveness of TPPs across the United States.

In the Arab world, many conferences, seminars, and studies have been conducted to benefit from the competency-based teacher preparation movement in enhancing the professional competencies of Arab teachers. These efforts have consistently emphasized the importance of prioritizing pre-service teacher training and identifying the competencies required of teachers in response to increasing public demands for improved learning outcomes. Among the most notable studies is that of Al-Khafaji and Jassim [20], which evaluated TPPs in Iraq in light of the teacher preparation and professional development strategy (2013–2020) and recent international trends. The study concluded that the programs failed to meet most standards, with only 9 out of 60 indicators achieved. In the Sultanate of Oman, Al-Naabi [21] conducted a study to assess the

quality of physical education teachers' performance using the InTASC standards. The results indicated that teachers met the standards to a moderate degree.

At the local level in Jordan, Al-Souqi [22] investigated the extent to which student teachers possess scientific and pedagogical competencies, according to InTASC standards, from their own perspectives and those of cooperating teachers. The study revealed a high level of overall competency. While no statistically significant differences were found in scientific competencies, pedagogical competencies showed significant differences in favor of student teachers. Similarly, Al-Amareen and Al-Shraa [23] examined the inclusion of professional development standards in the classroom teacher program at the University of Jordan. Findings showed that national standards were present in three areas: instructional planning, instructional implementation, and assessment of student learning. These were ranked respectively in terms of prevalence.

Alkhaldi [24] explored the extent to which primary school teachers in Jordan implemented the national professional standards for teacher training (NPSTT). The study reported a high level of implementation overall, with particularly strong application in areas such as organizing learning content, instructional planning, and learning environment creation. Gender-based differences were statistically significant in favor of female teachers, while experience-based differences were not significant. Finally, Khader and Abu-Khalifa [25] evaluated the degree to which graduates and novice teachers from the College of Educational Sciences and Arts at UNRWA University (Jordan) met international professional standards based on the InTASC standards. The findings indicated a high level of competency across all domains, with significant differences attributed to gender and years of experience.

Previous relevant studies revealed inconsistencies in the frameworks used to evaluate TPPs. While some relied on the perspectives of school principals, educational supervisors, and cooperating teachers, relatively few employed national or international professional standards. Such example is study by Alkhaldi [24], which used the National Standards for Teacher Development. Notably, only two studies—Al-Souqi [22] and Khader and Abu-Khalifa [25] applied the InTASC standards, and both focused on undergraduate students during field training prior to earning a bachelor's degree.

The target populations of prior studies varied, with most focusing on undergraduate students and only a few addressing graduates of higher diploma programs, such as Al-Souqi's research [22]. Additionally, earlier studies often concentrated on single specialization (e.g., physical education, classroom teacher, or primary education), as in the case of Al-Naabi [21]. Although Khader and Abu-Khalifa [25] included multiple specializations, their study remained limited to the undergraduate level. Furthermore, most evaluations did not differentiate between professional competencies, offering only general assessments.

In contrast, the present study is distinct in several ways. It evaluates teaching proficiency in-service teachers who graduated from HDTPP based on the InTASC standards, encompassing all specializations targeted by the program. The sample is representative of universities offering the diploma and includes data collected under appropriate temporal and spatial conditions, specifically, after graduation. Moreover, the study was conducted by experts in educational program evaluation from an external, independent body not affiliated with program stakeholders. The research instrument was developed based on internationally validated theoretical frameworks, ensuring objectivity and rigor in the evaluation process.

Universities in Jordan have taken on a substantial role in meeting the Ministry of Education's demand for qualified educators at both primary and secondary levels. The pre-service HDTPP currently offered at Jordanian universities represents a modern, collaborative initiative in teacher education. Originally launched as a professional diploma at the Queen Rania Al Abdullah Teacher Academy, it targeted teachers of classroom teacher specialization who teach students from grade 1 to grade 3. The program was later expanded into a postgraduate diploma. Since the 2022/2023 academic year, it has been implemented across Jordanian universities to prepare teachers of four core specializations: Arabic, English, mathematics, and science for grades from fourth through twelfth grades.

A review of Jordanian research reveals that studies evaluating the competencies of graduates from this specific higher diploma program remain scarce due to its recent establishment in 2022/2023. Existing studies primarily assessed practicum experience of pre-services teachers at the bachelor's level [25]. In light of the limited number of studies—to the best of the researchers' knowledge—that have evaluated the post-training effectiveness of HDTPP graduates using international standards such as InTASC, there is a clear and urgent need for rigorous evaluation research focusing on graduates who have entered the teaching profession. Such research is critical to examining the long-term effectiveness and retention of teaching proficiency acquired through the diploma program, using internationally accredited professional standards. Accordingly, this study aimed to evaluate the teaching proficiency of teachers who graduated from HDTPP in Jordan, based on the InTASC standards. The evaluation was conducted from the teachers' perspectives during their first academic year following graduation and working at the Ministry of Education public schools.

According to Nashwan *et al*. [26], a competent teacher is widely recognized as one of the most critical factors influencing the effectiveness of the educational process. Teacher proficiency is typically the

result of a robust and well-structured teacher preparation program. International accreditation bodies, such as the Council for the Accreditation of Educator Preparation (CAEP), and national institutions in Jordan, including the Higher Education Accreditation Commission, have increasingly emphasized the adoption of global standards and evidence-based evaluation models to ensure quality in teacher preparation [27], [28]. Among these standards, the InTASC framework has gained prominence due to its comprehensive and validated structure for assessing teacher proficiency [29].

Despite these developments, studies evaluating teacher preparation outcomes using international professional standards remain limited in Jordan. Al-Rawashdeh [30] highlighted that few studies have assessed graduates of teacher education programs using frameworks such as InTASC, with most research focusing on undergraduate-level practical education programs. In response, Al-Souqi [22] emphasized the need to evaluate graduates of the recently established HDTPP using internationally recognized standards.

Accordingly, the current study seeks to address this gap by evaluating the teaching proficiency of graduates from the pre-service of the HDTPP in Jordan during their first academic year of teaching in the public schools of the Ministry of Education. The study targets graduate in the following specializations: Arabic, English, mathematics, science (in all branches), and classroom teacher. This study is guided by the following research questions:

i) What is the level of teaching proficiency among graduates of the HDTPP in Jordan according to the InTASC standards?
ii) Are there statistically significant differences (α=0.05) in the teaching competency scores of graduates of the HDTPP in Jordan attributable to gender and specialization?
iii) Which domains of the HDTPP in Jordan require improvement, based on the extent to which its graduates meet the InTASC standards?

Regarding the significance of the study from a theoretical standpoint, this study contributes to the educational literature in Jordan and the broader Arab world by addressing TPPs and professional teaching proficiency. It offers an Arabic adaptation of the InTASC standards, thus enriching the Arabic educational standards corpus. Additionally, the study provides a validated measurement instrument that can be used to assess the quality and effectiveness of teacher education program graduates, supporting future research and comparative evaluations in this field.

From a practical standpoint, this study evaluates the teaching proficiency of graduates from the HDTPP in their first academic year of employment within the schools of the Ministry of Education. It focuses on key specializations: Arabic language, English language, mathematics, science, and classroom teacher. The findings help identify strengths and areas for improvement in the program based on the degree to which graduates meet the InTASC standards. Furthermore, the study offers actionable insights for teacher training and supervision departments at the Ministry of Education by highlighting the developmental needs of newly appointed teachers. These insights can inform the design of targeted professional development initiatives. The results also assist academic committees and curriculum developers in prioritizing areas for revision within the HDTPP to ensure that it equips future teachers with the competencies necessary for success and excellence in the profession.

The primary objective of this study was to evaluate the teaching proficiency of graduates from the HDTPP at Jordanian universities, based on the InTASC standards, during their first year of service in the Ministry of Education public schools. As a follow-up evaluation, the study aimed to measure the extent to which the HDTPP's impact persisted over time. It also sought to determine the overall level of teaching proficiency demonstrated by these graduates and examine the influence of two variables: gender and specialization on their professional proficiency. Furthermore, the study aimed to identify areas in need of development within the HDTPP, based on the graduates' teaching proficiency levels as aligned with the InTASC standards.

This study was limited by several factors. In terms of time, it was conducted at the end of the 2024–2025 academic year and focused on newly appointed teachers in the Ministry of Education who graduated from the HDTPP during 2023–2024. Spatially, the study was confined to public schools in the central region of Jordan, where the instrument was administered to new teachers who completed the HDTPP at the University of Jordan and Hashemite University. The human limits of the study encompassed only these new teachers in the Ministry of Education for the 2024–2025 academic year, specifically those graduating from the HDTPP at the universities in the specializations of Arabic, English, mathematics, science, and classroom teacher. Objectively, the study focused on evaluating the teaching proficiency of these graduates according to the InTASC standards. Finally, the validity of the study's results depended on the psychometric properties of the research instrument and the objectivity of the participants' responses.

The procedural definition of study terms are the following. First, the HDTPP in Jordan is a one-year pre-service teacher qualification program for bachelor's degree holders aspiring to become educators. It combines theoretical instruction, workshops, and practical training through three stages of school-based practicum involving observation, shadowing, and co-teaching. The training takes place in diverse educational

settings, including public and private schools with varying resources and classroom dynamics. Second, evaluation of the teaching proficiency of graduates of the HDTPP is defined as the assessment of graduates' professional teaching proficiency during the first year after their official appointment as teachers by the Ministry of Education. The evaluation focuses on graduates from the specializations of Arabic, English, mathematics, science, and classroom teacher. It involves determining the extent to which these graduates are capable of effectively performing their instructional roles, facilitating student learning, and supporting students' psychological, social, and moral development. Teaching proficiency is measured by using a rating scale grounded in the standards and performance indicators issued by the InTASC 2013 [19], and the competency level is represented by the total score attained on this instrument.

2. METHOD

This study employed the descriptive survey approach, as it is best suited to achieving the study's objective of evaluating the teaching proficiency of graduates from the HDTPP in Jordan, based on the InTASC standards. The evaluation was conducted from the perspective of graduates during their first academic year of employment in the Ministry of Education public schools, following their completion of the HDTPP. The study focused on graduates in the following specializations: Arabic language, English language, mathematics, science, and classroom teacher.

2.1. Study population and sample

The study population consisted of all graduates of the HDTPP for the academic year 2023/2024, who were nominated and appointed by the Ministry of Education in the specified specializations. The total number of new teachers from this population was 1,315 teachers. The study targeted this full population by administering the study instrument to graduates from two major institutions offering the pre-service HDTPP: The University of Jordan and the Hashemite University. The sample included only those who were confirmed to be appointed as teachers in public schools affiliated with the Ministry of Education for the 2024–2025 academic year. These individuals were contacted through their former instructors in the HDTPP, who continued to monitor their performance during their first year of service. The final available sample consisted of 686 teachers.

2.2. Study instrument

Based on the InTASC standards [19], the study developed an instrument entitled the teaching competency rating scale for graduates of the HDTPP in Jordan. The initial version of the scale comprised four general domains, encompassing 10 main standards and 33 performance indicators. Each performance indicator was rated using a 4-point Likert scale (1=weakly applicable, 2=moderately applicable, 3=highly applicable, 4=very highly applicable), consistent with other instruments grounded in the InTASC framework. The level of teaching competency was determined using the mean of scores, classified into three categories: high competency (mean≥3), medium competency (mean≥2 and <3), and low competency (mean≥1 and <2).

To establish the validity of the instrument, logical (content) validity was assessed. The instrument was reviewed by 12 experts specializing in educational measurement and evaluation, curricula and instruction, educational leadership, and practical training within the pre-service of the HDTPP. The expert panel evaluated the clarity, scientific accuracy, linguistic quality, and appropriateness of the sub-standards in relation to their corresponding main standards. Performance indicators receiving an approval rating of 80% or higher were retained. The reviewers also recommended the deletion of one performance indicator from the third criterion (educational environment) and suggested linguistic revisions to ensure the Arabic translation accurately reflected the intent of the original English version. As a result, the final version of the instrument included 10 main standards and 32 performance indicators. Table 1 presents the general domains of the scale, the main standards under each domain, and the number of performance indicators corresponding to each criterion.

Table 1. Domains, standards, and performance indicators in the competency rating scale for graduates of the HDTPP based on the InTASC standards

Domain	Standard	Performance indicator	Domain	Standard	Performance indicator
Learner and learning	1. Learner development	1-2	Teaching practice	6. Evaluation	15-18
	2. Learning differences	3-5		7. Planning for teaching	19-21
	3. Learning environments	6-8		8. Teaching strategies	22-25
Content	4. Content knowledge	9-11	Professional responsibility	9. Professional learning and ethical practice	26-29
	5. Applying content	12-14		10. Leadership and collaboration	30-32

To verify the construct validity of the study instrument, it was applied to a pilot sample of 87 male and female teachers drawn from the study population but outside the main sample. The corrected correlation coefficient was calculated between each sub-domain and its corresponding main domain, as well as between each domain and the total score on the scale. Table 2 shows the values of the correlation coefficients.

Table 2 shows that these correlations served as indicators of the discriminatory power of the items. The results indicated that the correlation coefficients between the performance indicators and the total score ranged from 0.53 to 0.82, while the correlations between the main criteria and the total score ranged from 0.74 to 0.90. All correlation values were positive, statistically significant at the 0.05 level, and indicated strong direct relationships. This means that increases in individual indicator scores aligned consistently with increases in total competency scores. These findings demonstrated that the items of the rating scale possess high discriminatory power, supporting the conclusion that the scale has strong construct validity and effectively measures the intended teaching proficiency [31]. Further, to verify the reliability of the study instrument, the reliability coefficient for internal consistency was extracted using the Cronbach's alpha method, and Table 3 shows the values of the reliability coefficients. The table shows that the values of internal consistency coefficients ranged between (0.65-0.88), which are acceptable values [31].

Table 2. Correlation of the performance indicator and correlation of the main domain with the total score

Domain	Standard	Performance Indicator	Correlation of the indicator with the total score	Correlation of the main domain with the total score
Learner and learning	1. Learner development	1	0.74*	0.74*
		2	0.59*	
	2. Learning differences	3	0.68*	0.83*
		4	0.75*	
		5	0.74*	
	3. Learning environments	6	0.77*	0.84*
		7	0.78*	
		8	0.73*	
Content	4. Content knowledge	9	0.74*	0.86*
		10	0.80*	
		11	0.72*	
	5. Applying content	12	0.68*	0.84*
		13	0.77*	
		14	0.67*	
Teaching practice	6. Evaluation	15	0.78*	0.90*
		16	0.73*	
		17	0.79*	
		18	0.79*	
	7. Planning for teaching	19	0.73*	0.84*
		20	0.73*	
		21	0.82*	
	8. Teaching strategies	22	0.71*	0.85*
		23	0.78*	
		24	0.76*	
		25	0.70*	
Professional responsibility	9. Professional learning and ethical practice	26	0.72*	0.86*
		27	0.68*	
		28	0.76*	
		29	0.74*	
	10. Leadership and collaboration	30	0.74*	0.81*
		31	0.53*	
		32	0.74*	

*Statistically significant at the level of significance (α=0.05)

Table 3. Values of internal consistency coefficients using Cronbach's alpha method

Domain	Standard	Cronbach's alpha	Domain	Standard	Cronbach's alpha
Learner and learning	1. Learner development	0.73	Teaching practice	6. Evaluation	0.88
	2. Learning differences	0.84		7. Planning for teaching	0.88
	3. Learning environments	0.88		8. Teaching strategies	0.88
Content	4. Content knowledge	0.84	Professional responsibility	9. Professional learning and ethical practice	0.86
	5. Applying content	0.77		10. Leadership and collaboration	0.65

2.3. Ethical considerations

Ethical considerations were carefully observed throughout this study. The sample was limited to teachers whose official appointments in public schools affiliated with the Ministry of Education were

confirmed for the relevant academic year. Participants were contacted through their former teachers in HDTPP, who continued to monitor their performance during their first year of service. This approach contributed to a final sample of 686 teachers, representing a response rate of 52% of the total study population, which is considered acceptable for statistical analysis [31]. Necessary ethical approvals were obtained from the relevant authorities prior to data collection, and informed consent was guaranteed from all participants. The study objectives and procedures were explained, and participants' rights were clarified, including their right to withdraw at any time without repercussions. The survey was conducted completely anonymously, without collecting any personal data that would identify participants, to maintain confidentiality and enhance the credibility of responses. To reduce the possibility of bias or social desirability influence, participants were assured that their data would be used only for scientific research purposes and would have no impact on their professional evaluation or employment status.

2.4. Study variables and statistical treatments

The dependent variable in this study is the level to which teachers who graduated from the HDTPP possess the InTASC standards. This variable is treated as a continuous composite score, calculated based on the total scores obtained across 32 sub-criteria on the competency rating scale. Two independent variables were examined, both of which are categorical: i) specialization: a nominal variable with five levels (Arabic, English, mathematics, science, classroom teacher) and ii) teacher gender: a nominal variable with two levels (male and female).

To address the first and third research questions, means, standard deviations, and percentages were calculated to describe the level of teaching proficiency and identify areas for the HDTPP improvement based on the InTASC standards. To answer the second research question, which examines differences in teaching proficiency scores according to gender and specialization, a 2-way ANOVA and MANOVA were conducted. This statistical test was used to identify any statistically significant main effects or interaction effects between the independent variables on the proficiency scores.

3. RESULTS AND DISCUSSION

This study aimed to evaluate the level of teaching proficiency among graduates of the HDTPP in Jordan, based on the InTASC standards. The evaluation focused on graduates' self-perceptions during their first year of working in public schools following graduation. Using data from a standardized rating scale, the results were organized according to the study's research questions.

3.1. What is the level of teaching proficiency among graduates of the HDTPP in Jordan according to the InTASC standards?

3.1.1. The level of teaching proficiency according to the domains and standards

Means and standard deviations were extracted for the teaching proficiency score of graduates of the HDTPP and for the following four areas: learner and learning, content, teaching practice, and professional responsibility. Table 4 shows that the overall mean score for teaching proficiency among graduates of the HDTPP was 2.88, representing a medium level of proficiency. This score is close to the threshold for a high level (3.0), indicating that graduates approached, but did not fully attain high proficiency overall. When examining the four main domains of the InTASC standards, the highest mean was found in professional responsibility (m=2.93), followed by teaching practice (M=2.89), and then both learner and learning and content domains, which recorded equal means of 2.86. All domains fell within the medium proficiency range.

The consistency in domain scores suggests that the teacher preparation program had a balanced impact on the development of teaching proficiency across all domains. This indicates that the HDTPP provided equitable training experiences and did not disproportionately emphasize one area over others. As such, the results reflect a level of coherence in how the program addresses different professional standards, ensuring that teachers are equally prepared across the board. This supports the notion that effective teacher education programs should align with a comprehensive standards framework to achieve balanced professional growth [27], [28].

Additionally, the results revealed that standard means ranged between 2.78 and 3.03. Among these, the learning environments standard recorded the highest mean score (M=3.03), which reflects a high level of proficiency. This is likely due to the graduates' practical teaching experiences after completing the HDTPP, which provided opportunities to apply practical strategies in classroom settings. Such findings reinforce the importance of performance-based evaluation frameworks, such as the InTASC standards that assess teacher effectiveness [32]. Furthermore, the results are consistent with Marzano's argument [16] that professional standards function as vital benchmarks for ensuring quality in teaching performance.

Table 4. Teaching proficiency among graduates of the HDTPP, in general, and according to the domains and standards of the InTASC

Domain	Standard	Mean	Standard deviation	Proficiency level
Learner and learning	1. Learner development	2.78	0.63	Medium
	2. Learning differences	2.78	0.62	Medium
	3. Learning environments	3.03	0.60	High
	Total for the domain	2.86	0.55	Medium
Content	4. Content knowledge	2.83	0.60	Medium
	5. Applying content	2.89	0.60	Medium
	Total for the domain	2.86	0.56	Medium
Teaching practice	6. Evaluation	2.84	0.60	Medium
	7. Planning for teaching	2.99	0.62	Medium
	8. Teaching strategies	2.84	0.58	Medium
	Total for the domain	2.89	0.56	Medium
Professional responsibility	9. Professional learning and ethical practice	2.95	0.59	Medium
	10. Leadership and collaboration	2.90	0.63	Medium
	Total for the domain	2.93	0.58	Medium
Total for the study instrument		2.88	0.53	Medium

In contrast, the lowest-performing standard was learning differences (M=2.78), while learner development also showed a relatively low score (M=2.78). Both remained within the medium teaching proficiency level but highlighted standards for improvement. Despite moderate proficiency overall, patterns demonstrated conceptual gaps in learner diversity and instructional practices, indicating weak inclusiveness and formative assessment procedures. This finding may be attributed to concentration of the HDTPP curriculum on practical experience without giving adequate exposure to inclusive pedagogies and dedicated coursework in developmental psychology and inclusive education. Such courses are essential for preparing teachers to respond effectively to diverse student needs and support equitable learning outcomes. Addressing these gaps could lead to more well-rounded and inclusive teaching practices.

Finally, comparisons with previous research showed alignment and disagreement. The current findings are consistent with Alkhaldi [24], which reported high teacher proficiency in creating effective learning environments. Similarly, Al-Souqi [22] found that the overall availability of professional standards was moderate, reinforcing the current study's conclusions. However, previous studies [25], [29] found higher levels of proficiency among new teachers, indicating that contextual factors, institutional differences, or curriculum changes may account for the discrepancies.

3.1.2. The level of teaching proficiency according to specializations

To examine potential differences in teaching proficiency based on specialization, means, and standard deviations were calculated for five major areas of specialization targeted by the HDTPP: Arabic, English, mathematics, sciences (all branches), and classroom teacher. Additionally, an overall teaching proficiency score was computed across all specializations. These values are presented in Table 5, which provides a comparative view of how graduates in each specialization performed in relation to the InTASC standards.

Table 5 reveals that Arabic language teachers achieved the highest level of teaching proficiency among the five specializations, with a mean of 2.98, reflecting a medium level of proficiency approaching the threshold of a high level (3.0–4.0). This group was followed by classroom teachers (M=2.95), English language teachers (M=2.91), science teachers (M=2.81), and finally mathematics teachers, who scored the lowest mean (M=2.73). Despite the variation in mean scores, all specializations remained within the average proficiency range, suggesting that the teacher preparation program had a moderate and relatively uniform impact across disciplines.

These findings indicated that while the program successfully supports the development of core teaching competencies across all targeted specializations, it does so at an average level, without achieving high proficiency in any area. This consistency implies a shared program structure and pedagogical approach across specializations, which ensures a baseline of proficiency but may lack differentiation to address specific needs or challenges unique to each specialization.

Table 5. Teaching proficiency according to specialization

Specialization	Mean	Standard deviation	Proficiency level
Arabic	2.98	0.57	Medium
English	2.91	0.50	Medium
Mathematics	2.73	0.56	Medium
Science	2.81	0.45	Medium
Classroom teacher	2.95	0.48	Medium
Total	2.88	0.53	Medium

The current findings are partially consistent with Al-Souqi's study [22], which reported an average proficiency level among Arabic language student teachers during field training. However, it differs with regard to mathematics specialization, where the study found a high proficiency level, whereas the current study found mathematics teachers to have the lowest mean score. Similarly, the results are consistent with Alkhaldi study [24] of male and female primary school teachers, which concluded that the degree of application of the InTASC standards was at a moderate level. These consistencies lend support to the reliability of the current findings and reinforce the call for deeper specialization within teacher education programs to raise performance beyond the average threshold.

Overall, the medium level results revealed important implications for the state of education in Jordan. First, it appears that graduates possess sufficient preparation to meet the basic requirements of the teaching profession, but their lack of advanced skills limits their ability to make a profound educational impact. Second, there are knowledge gaps in addressing learner diversity and ensuring their inclusiveness, a significant challenge in the Jordanian context, which is witnessing increasing demographic, social, and economic disparities. Without enhancing competencies in the areas of inclusive education and formative assessment, graduates may be unable to effectively respond to the needs of all learners, contributing to the persistence of achievement gaps. Third, there is a lack of differentiation between disciplines in addressing the educational challenges specific to each field. This is concerning in light of national efforts to empower teachers with professional competencies that align with international standards. Relying solely on average competencies may limit graduates' ability to develop critical thinking, problem-solving, and creativity skills, which are pivotal elements of Jordan's educational reform agenda. Finally, these findings underscore the urgent need for fundamental reforms in teacher education programs, through the implementation of interventions specifically targeted at inclusive education, developmental psychology, and subject-specific teaching strategies. Strengthening these areas will not only contribute to raising teacher competency, but will also support the national drive toward greater equality, quality, and competitiveness in the Jordanian education system.

3.2. Are there statistically significant differences (α=0.05) in the teaching competency scores of graduates of the HDTPP in Jordan attributable to gender and specialization?

To answer this question, means and standard deviations were extracted, as shown in Table 6. The table indicates the presence of observable differences in the means of teaching proficiency scores based on gender and specialization. To determine whether these differences are statistically significant (α=0.05), a 2-way ANOVA was conducted. The results of this analysis are presented in Table 7. The table shows that there is a statistically significant effect of specialization on the level of teaching proficiency ($p<0.05$) with a small effect size (η^2=0.030). This indicates that the specialization in which the teacher was trained has a measurable, though modest, impact on their overall teaching proficiency. In contrast, the analysis revealed no statistically significant effect of gender on teaching proficiency, suggesting that male and female teachers demonstrated similar levels of teaching proficiency across the sample.

Table 6. Means and standard deviations of teaching proficiency according to the teacher's gender and specialization

Variable	Variable levels	Mean	Standard deviation
Teacher gender	Male	2.91	0.64
	Female	2.88	0.50
Teacher specialization	Science	2.81	0.45
	Mathematics	2.73	0.56
	Arabic	2.98	0.57
	English	2.91	0.50
	Classroom teacher	2.95	0.48

Table 7. The 2-way ANOVA results for the effect of gender and specialization on the level of teaching proficiency

Source	Sum of squares	Degrees of freedom	Mean squares	F	P	η^2
Gender	.480	1	.480	1.77	.180	.000
Specialization	6.52	4	1.63	6.06*	.000	.030
Error	182.77	680	.270			
Total	189.76					

*Significant at (α=0.05)

To determine which specific specializations contributed to the significant differences, a Scheffé post hoc test was conducted. The results of this comparison are presented in Table 8. The results of the Scheffé post hoc comparisons presented in Table 8 indicates that graduates specializing in mathematics exhibited the lowest level of teaching proficiency among all specializations. The differences in mean proficiency scores were statistically significant in favor of all other specializations, with the exception of science, where the difference was not statistically significant.

To reveal the effect of teachers' gender and specializations on teaching proficiency according to the domains, means and standard deviations were extracted. Table 9 indicates the presence of observable differences in the means of teaching proficiency according to the domains. To determine whether these differences are statistically significant (α=0.05), a MANOVA test was conducted. The results of this analysis are presented in Table 10.

Table 10 reveals a statistically significant effect in the domains of teaching proficiency —namely learner and learning, content, teaching practice, and professional responsibility—among graduates of HDTPP. These differences were attributed to the specialization variable, with a small effect size ranging between 0.030 and 0.040. The strongest effect was observed in the content domain across the five specializations, followed by professional responsibility, then teaching practice, and finally learner and learning. No statistically significant differences were found based on gender across any of the four domains of teaching proficiency. These findings align with the results of the two-way ANOVA reported in Table 7.

Table 8. Scheffé post hoc test results for comparisons between specializations in teaching proficiency

Comparisons by teacher specialization		Difference between means	Standard error	P
Mathematics	Science	-0.08	.070	.890
	Arabic	-0.25*	.060	.000
	English	-0.18*	.060	.040
	Classroom teacher	-0.22*	.060	.010
Science	Arabic	-0.18	.0760	.240
	English	-0.10	.0760	.720
	Classroom teacher	-0.14	.0760	.430
Arabic	English	0.07	.060	.830
	Classroom teacher	.030	.060	.990
English	Classroom teacher	-0.04	.060	.980

*Statistically significant at the level of significance (α=0.05)

Table 9. Means and standard deviations for the domains of teaching proficiency according to gender and specialization

Domain	Variable	Variable levels	Mean	Standard deviation
Learner and learning	Teacher gender	Male	2.86	0.64
		Female	2.87	0.53
	Teacher specialization	Science	2.81	0.47
		Mathematics	2.72	0.58
		Arabic	2.95	0.58
		English	2.89	0.54
		Classroom teacher	2.93	0.52
Content	Teacher gender	Male	2.87	0.69
		Female	2.86	0.54
	Teacher specialization	Science	2.78	0.50
		Mathematics	2.68	0.59
		Arabic	2.98	0.60
		English	2.89	0.56
		Classroom teacher	2.93	0.52
Teaching practice	Teacher gender	Male	2.93	0.64
		Female	2.89	0.54
	Teacher specialization	Science	2.82	0.48
		Mathematics	2.75	0.59
		Arabic	3.00	0.61
		English	2.92	0.54
		Classroom teacher	2.94	0.52
Professional responsibility	Teacher gender	Male	2.96	0.68
		Female	2.92	0.56
	Teacher specialization	Science	2.82	0.49
		Mathematics	2.78	0.62
		Arabic	3.01	0.61
		English	2.95	0.55
		Classroom teacher	3.01	0.55

Table 10. MANOVA test for the effect of the teacher's gender and specialization on the domains of teaching proficiency

Source		Sum of squares	Degrees of freedom	Mean squares	F	P	η^2
Gender	Learner and learning	.160	1	.160	.540	.460	.000
Hotelling's T^2 test	Content	.410	1	.410	1.34	.250	.000
(Value, F, Sig) =	Teaching practice	.670	1	.670	2.20	.140	.000
(0.449, 0.924,	Professional	.820	1	.820	2.50	.110	.000
0.005)	responsibility						
Specialization	Learner and learning	5.38	4	1.34	4.52*	.000	.030
Hotelling's T^2 test	Content	8.34	4	2.08	6.77*	.000	.040
(Value, F, Sig) =	Teaching practice	5.88	4	1.47	4.85*	.000	.030
(0.046, 1.959*,	Professional	6.88	4	1.72	5.28*	.000	.030
0.013)	responsibility						
Error	Learner and learning	202.16	680	300			
	Content	209.41	680	.310			
	Teaching practice	206.11	680	.300			
	Professional	221.93	680	.330			
	responsibility						
Total	Learner and learning	207.54	685				
	Content	217.77	685				
	Teaching practice	212.16	685				
	Professional	228.98	685				
	responsibility						

*Significant at (α=0.05)

To determine which specializations accounted for the differences in teaching proficiency, Scheffé's post-hoc test was used. The results were consistent with those presented in Table 8. In the learner and learning domain, mathematics graduates demonstrated the lowest levels of competence, with statistically significant differences in favor of Arabic language and classroom teacher graduates only. No significant differences were found with other specializations. In the content domain, mathematics graduates also showed the lowest teaching proficiency. Statistically significant differences were found in favor of Arabic language, classroom teacher, and English specializations, while no significant differences were observed with science.

Similarly, in the teaching practice domain, mathematics graduates were again the least competent, with significant differences only in favor of Arabic language graduates. Differences with other specializations (science, English, and classroom teacher) were not statistically significant. In the professional responsibility domain, mathematics graduates continued to score lowest. Statistically significant differences were found in favor of Arabic language and classroom teacher graduates, while comparisons with science and English were not statistically significant.

The previous findings suggest that graduates from the mathematics specialization are relatively less prepared in terms of teaching proficiency as measured by the InTASC standards. This result aligns with previous research. For instance, Juma [33] found that many students tend to rely on rote memorization of mathematical rules and formulas without developing a deep conceptual understanding necessary for applying mathematical thinking across various contexts. Similarly, Al-Lasasameh and Al-Shara [34] attributed the underperformance in mathematics to insufficient diagnostic practices that fail to address students' learning difficulties, which in turn hinders the development of teaching proficiency among future mathematics educators These findings collectively underscore the need to revise and strengthen mathematics teacher preparation programs, with a focus on conceptual understanding, diagnostic teaching strategies in mathematics and application-based learning.

Moreover, Table 8 allows for a ranking of specializations in descending order based on teaching proficiency scores. The most proficient group was Arabic language teachers, followed by classroom teachers, and then English language teachers. These results are consistent with the findings of Al-Souqi [22], who reported statistically significant differences (α=0.05) in student teachers' mastery of pedagogical standards, with Arabic language teachers outperforming their peers.

3.3. Which domains of the HDTPP in Jordan require improvement, based on the extent to which its graduates meet the InTASC standards?

3.3.1. Opportunities for improvement in the domain of learner and learning

The means and standard deviations for the standards and performance indicators in the domain of learner and learning indicated that within the learner and learning domain, the two weakest standards were learner development (M=2.78) and diversity of learning (M=2.78). These values fall within the medium proficiency range and are therefore considered key opportunities for improvement within the teacher preparation program. At the level of performance indicators of these domains, the weakest indicator was 3,

"I design and adapt instruction for special populations (such as gifted and talented students, learning disabilities) using strategies and resources to promote growth and achievement," (M=2.67), making it a critical area requiring targeted intervention. This finding highlighted the developmental need within the learner and learning domain. It indicated that there is a clear need to enhance HDTPP preparation in areas related to student developmental understanding and addressing learners' diverse needs, to ensure more inclusive and developmentally appropriate teaching practices.

3.3.2. Opportunities for improvement in the domain of content

The means and standard deviations for the standards and performance indicators in the domain of content showed that within the content domain, the weakest standard was content knowledge (M=2.83). Although this score falls within the medium proficiency range, it highlights a domain in need of further development and is therefore considered an opportunity for improvement. At the level of specific performance indicators, the weakest indicator was indicator 9: "I know core concepts (i.e., how knowledge is organized and tracked in a distinct system), research and inquiry tools (e.g., the inquiry cycle, project-based learning), and/or domain structures (curriculum)," under the content knowledge standard (M=2.66). This suggests that graduates face challenges in mastering or demonstrating deep content understanding, which is essential for effective teaching and curriculum alignment. The finding suggests that more emphasis is needed on strengthening the graduates' foundational understanding of subject matter, which is critical for making instructional decisions, differentiating instruction, and fostering deeper student understanding. As such, enhancing content-focused coursework and subject-specific pedagogical strategies may be a strategic priority for improving the effectiveness of the HDTPP in this domain.

3.3.3. Opportunities for improvement in the domain of teaching practice

The means and standard deviations for the standards and performance indicators in the domain of teaching practice revealed that within the teaching practice domain, the two weakest standards were evaluation (M=2.84) and teaching strategies (M=2.84). While these scores fall within the medium proficiency range, they indicated key opportunities for improvement in the HDTPP. These findings are consistent with the results of Al-Amareen and Al-Shraa [23], who noted that despite the presence of national professional development standards in the classroom teacher program, the "evaluation of student learning" remained one of the least addressed domains. This reinforces the need for enhanced emphasis on evaluation literacy and the strategic use of teaching methods during teacher preparation.

At the level of performance indicators, the weakest indicator in teaching strategies standard was indicator 25, "I communicate with students and their families to enhance student learning" (M=2.76). The weakest indicator in evaluation standard was indicators 18: "I guide students to determine the quality of their work by utilizing models, providing descriptive feedback, and/or guiding them to examine their own or others' performance and products" (M=2.81). These indicators represent important opportunities for development. These findings highlighted the need to strengthen self-assessment and peer-assessment activities among students to improve evaluation standard. Further, there is a need to improve partnerships with families to enhance teaching strategies standard.

3.3.4. Opportunities for improvement in the domain of professional responsibility

The means and standard deviations for the standards and performance indicators in the domain of professional responsibility indicated that within the professional responsibility domain, the weakest standard was leadership and collaboration (M=2.90). Although within the medium range, this score suggests an opportunity for improvement. At the level of performance indicators, the weakest was indicator 31: "I conduct meaningful research on learning issues, policies, and practices that ensure learner growth and support high expectations for student learning" (M=2.68), which falls under the leadership and collaboration standard. This result highlighted a specific need to strengthen scientific research skills within the HDTPP, as research engagement is essential for evidence-informed teaching and policy advocacy.

4. CONCLUSION

The findings indicate that graduates of the HDTPP in Jordan possess a medium level of overall teaching proficiency according to InTASC standards, characterized by high consistency and low variance among participants. This uniformity suggests the program exerts a balanced influence across the four main domains: learner and learning, content, instructional practice, and professional responsibility. Furthermore, the program demonstrates sustainable long-term effectiveness, as proficiency levels measured one year after graduation remained consistent with performance during the initial training phases.

Regarding demographic variables, while gender had no impact on proficiency, academic specialization resulted in statistically significant, though weak, differences. Arabic specialization graduates

demonstrated the highest proficiency, while mathematics teachers recorded the lowest, highlighting a specific area of concern. Consequently, the study identified clear priorities for development: the learner and learning domain (specifically regarding diversity) requires the most attention, followed by content knowledge, teaching strategies, and finally, professional responsibility regarding leadership and collaboration.

Based on these results, it is recommended that the HDTPP further align its curriculum with InTASC standards, focusing on enhancing evaluation methods, addressing learner diversity, and reinforcing scientific research skills—particularly through inquiry-oriented methods in mathematics. Additionally, the evaluation scale used in this study offers a valuable standardized tool for future objective assessment. Ultimately, refining the program's focus areas and syllabi is expected to elevate graduate proficiency and positively impact the broader Jordanian educational landscape.

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C : **C**onceptualization
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R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

INFORMED CONSENT

The researchers ensured that participants obtained informed consent by clearly explaining the purpose of the study, how the data would be used, and their right to withdraw, as well as any potential risks or benefits. Participation in the study was entirely voluntary, with no negative consequences for not participating. To ensure privacy, data were treated with strict confidentiality. Participants were anonymized, and they were informed of how their data would be stored and retained. The survey design, which ensured anonymity and the use of a representative sample, also reduced bias. The survey's validity and reliability were enhanced through peer review.

DATA AVAILABILITY

The data supporting the findings of this study are available from the corresponding author, [YMA], upon reasonable request.

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