The Influence of Teaching Talent on Student Learning Outcomes

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ABSTRACT

Student-teacher candidates are expected to receive high-quality learning to achieve optimal learning outcomes. This research examines the influence of teaching talent on student learning outcomes. The research method used is quasi-experimental. The research design uses a Factorialized (2x2) Version of the Nonequivalent Control Group Design. The research sample was 140 prospective teacher students. The data analysis technique uses the Analysis of Variances two-factor experiment technique. The research conclusion states that differences in teaching talent influence differences in student learning outcomes with an F count of 237,333, significant at $p<0.05$, and a relatively strong effect size of 0.440. There is a significant difference in the learning outcomes of students who have strong teaching talents compared to the learning outcomes of students who have weak teaching talents. The average value of the subject learning outcomes of the group of students who have strong teaching talents is greater than the average value of the subject learning outcomes of the group of students who have weak teaching talents. Overall, this research contributes to understanding the influence of students' teaching talents in improving learning outcomes, ultimately resulting in their quality as prospective teachers.

Keywords: *learning outcomes, student learning outcomes, teaching, teaching talent*

INTRODUCTION

Studying and learning in higher education is an interactive process through which knowledge and skills are shared with students. Increased understanding and ability to manipulate social life, economics, politics, and the physical environment can help students adapt through their work as teachers in the future (Klassen et al., 2021; Love & Love, 2023). Based on the experience of various countries with high-quality education, such as Singapore, England, South Korea, Finland, and China (OECD, 2021), it was found that the root of the problem of education quality is the quality of teachers. The study summarizes how the countries mentioned above have made teacher recruitment a strict national policy to position the teaching profession as an attractive career choice. The study links efforts to build a high-quality teaching profession to the economic development of these countries. Teaching talent, in addition to academic talent, has become part of best practices and national policies in the administration of prospective teachers in several countries (OECD, 2021).

The research results of (Mei, 2021; Minarikova et al., 2021; Mutrofin et al., 2017; Sajan, 2010), show a significant impact between teaching talent and exam results at the undergraduate level. According to (Mei, 2021; Sajan, 2010), teaching talent is the primary determinant and a significant predictor of teacher effectiveness. Teaching talent has a significant correlation with teaching success. The results found that entrance tests for teacher education programs could not explain the teaching talents of prospective teachers (Barrios-Martínez et al., 2019; Li & Liu, 2021). Therefore, it is recommended that the teaching aptitude test be part of the educational entrance test for prospective teachers.

The research concluded that among the four predictors studied, attitude towards the teaching profession was the single most capable predictor of teaching aptitude compared to the other three predictors, such as interest, perception, and self-concept about the teaching profession (Ryboretskaya, 2021). A significant correlation was found between teaching aptitude and learning outcomes defined as mental abilities, educational problem-solving, instructional awareness, and creativity.

According to (Matete, 2021; Mei, 2021; Rosson & Pennington Weeks, 2018), what talent means is a naturally recurring form of ideas, moods, and actions that can be applied as something productive. The combination of talent with knowledge, defined as facts and various things learned, and skills, defined as the steps of an activity or the ability to carry out an activity, form what is called strengths. Strength: (1) talent is a recurring natural pattern of thoughts, feelings, or behavior, (2) knowledge from experience and lessons learned; and (3) expertise is the steps of an activity or the ability to carry out an activity (Matete, 2021; Mei, 2021; Rosson & Pennington Weeks, 2018).

Explains that talent is a symptomatic condition of one's readiness to achieve superior potential abilities and one's readiness to build interest according to one's abilities (Ryboretskaya, 2021). In the context of student teacher candidates, talent is more emphasized on readiness to learn in special learning situations and recognize their cognition, conation, and affection. Teaching is defined as everything that is done to facilitate human learning (Matete, 2021; Reigeluth & Carr-Chellman, 2009).

Based on the above definition, a conceptual definition can be put forward that teaching talent is a form of thoughts, feelings, and naturally recurring behavior that can be applied as something productive in doing everything to facilitate human learning. Operationally, teaching talent means the strength or weakness of a prospective teacher's special potential abilities before choosing the teaching profession as his way of life. This teaching talent can be tracked through the publications of The Gallup Organization (Clifton classification) (Asplund et al., 2007; Mei, 2021; Rosson & Pennington Weeks, 2018) on human talent in general through answers to the question of why he wants to teach (Mei, 2021; Minarikova et al., 2021) and through models of recruiting, strengthening, and enhancing teaching talent (Ilaltdinova & Kisova, 2018).

According to (Matete, 2021; Nilma Taula'bi', 2022), a person's success in teaching is also primarily determined by the reasons he chooses a teaching profession. This means that preferences for the teaching profession cannot be ignored if we want to measure the teaching talent of a prospective teacher. On this basis, preference for relevant teaching professions is included as a factor or component of teaching talent. Based on the synthesis of the theory of human talent and the arguments above, the components or factors of teaching aptitude studied in this study, and named with new names without changing their substance are as follows: (1) tendency towards teaching work; (2) scientific interaction capability; (3) concern for children; and (4) as a learner (Karataş & Han, 2022; Radulović et al., 2022).

The main characteristics or characteristics of the teaching profession preference indicators are being proud of the teaching profession, aspiring to become a teacher from an early age, taking teacher education of one's own accord and no one forcing them, refusing jobs

other than the teaching profession, making the teaching profession a choice and path. Life, and places teaching as the most attractive profession compared to other professions. According to (Mansur & Rafiudin, 2020), achieving learning objectives cannot be separated from the teacher's role in educating. One of the obstacles experienced by educational actors in learning is students' lack of interest in participating in learning. As a prospective teacher, you need to have communication skills to motivate and attract students' interest (Hanik, 2020).

Indicators of educational communication skills have the following characteristics: having the confidence to be a good speaker at every opportunity, feeling superior in storytelling or storytelling, constantly sharing ideas, thoughts, and suggestions with other parties; and always read references or books in his daily life. Indicators of empathy for children include the characteristics always enjoying hanging out with children, feeling fully responsible for children when they are at school, and feeling part of the children's lives in their daily lives. Meanwhile, the indicators of being a learner have the following characteristics: readiness to learn anything, anywhere and anytime; make learning difficulties a challenge that must be faced bravely, and have a life principle of continuously learning from everyone. In interactions with students, problems will definitely arise, so communication needs to be built to resolve them (Wowor & Putri, 2021).

Teaching talent is hypothesized to affect student learning outcomes as the results of research by (Al-Agili et al., 2012; Mudaim & Wibowo, 2018; Mutrofin et al., 2017) regarding the factors that influence learning outcomes, proves that attributes about teachers and their characteristics such as teaching experience, use of teaching methods and learning practices have a significant positive correlation with learning outcomes. Their research recommends the importance of institutional studies to formulate practical capacity-building programs and studies on the use of learning methods in order to achieve learning effectiveness.

METHODS

The research method is quasi-experimental (Creswell & Creswell, 2018; Weyant, 2022). The independent variable consists of two factors and two dimensions each, therefore, the design chosen is a Factorialized (2x2) Version of the Nonequivalent Control Group Design (Creswell & Creswell, 2018; Weyant, 2022). Respondents are already in the form of intact groups, and the university leadership policy does not allow changing groups already systemized. The research format is with one experimental group and one control group each.

The population is all respondents at Universitas Negeri Malang, Jalan Semarang 5 Malang, and Jawa Timur, undergraduate education students. The sampling technique was carried out using the Cluster Sampling technique and randomly selecting research subjects. The basis for consideration is that all research subjects are taking the same Learning Design course and the teaching lecturers have at least 10 years of teaching experience. The sample of research subjects was 140 students, divided into group 1 of 70 students. Group 2 consisted of 70 students. The sample is determined from observations of ability levels. The student ability level can be seen from the differences in student pretest learning results.

The research instruments were a teaching talent questionnaire called the teaching talent questionnaire and learning outcomes tests. This instrument obtains data on teaching talents and student learning outcomes. Researchers, with the assistance of a psychologist and a doctor of education in the field of Learning Technology prepared the teaching talent questionnaire and learning outcomes tests. The teaching talent questionnaire instrument follows the rating scale questionnaire. Students are asked to rate themselves against a score of 1–9. The total score shows the strengths and weaknesses of students' teaching talents. The content of the instrument refers to the considerations and assessments of relevant experts to obtain validity, in determining the value of language use and each item of consistent instrument material. The validity results obtained were 91.67% of the content of the talent

questionnaire instrument, and the cognitive learning results test was 80.25%, so the test instrument was declared valid and suitable for use. The reliability of the items is related to the issue of trust. From the results of Cronbach's Alpha test calculations assisted by IBM SPSS Statistics 26 for Windows, the reliability of the talent questionnaire items was found to be 0.957, which can be categorized as high reliability.

The analysis technique for testing research hypotheses related to teaching talent uses (1) normality test and homogeneity test used as prerequisite tests, (2) t test, and (3) two-way ANOVA. Testing (rejection and acceptance) of research hypotheses is determined based on the error rate or probability (p) alpha ($\alpha=0.05$), and a confidence interval of 95%. In SPSS (Statistical Package for Social Science) software for Windows version 26, significance tests that result in the rejection and acceptance of research hypotheses are available. The hypothesis tested is that students with strong teaching talents have different learning outcomes from those with weak teaching talents.

RESULTS AND DISCUSSION
Results

The teaching talent variable is categorical data in two dimensions or two categories, namely strong teaching talent and weak teaching talent. This categorization is based on a standard score of 7 for all indicators multiplied by the number of questionnaire items. Research subjects who obtained a score <(7x the number of items) were categorized as having weak teaching talent; while research subjects who obtained a score ≥ (7x the number of items) were categorized as having strong teaching talent. Based on that, considering the number of questionnaire items as many as 16 items, subjects who get a score of ≤111 are categorized as having weak teaching talent. Meanwhile, subjects who get a score ≥112 are categorized as having strong teaching talent.

The number of subjects in the experimental group with strong teaching talents was 32 people (45.7%), while the subjects with weak teaching talents were slightly more, amounting to 38 people (54.3%). The number of subjects in the control group with weak teaching talents amounted to 34 people (48.6%), while the subjects with strong teaching talents were slightly more, totaling 36 people (51.4%). Differences in frequency differences, whether significant or not, were also further analyzed using Chi Square (χ^2) analysis as a statistical tool that is commonly used to test differences in frequencies. Statistically, the results of Chi Square (χ^2) which examine the difference in frequency between weak and strong gifted teaching subjects, both in the experimental and control groups, were not different. The Chi Square coefficient (χ^2)=0.024 is insignificant, $p=0.877>0.05$. The balanced proportions between cells indicate that the data on teaching aptitude obtained from research results deserves further analysis to test the hypothesis.

Student learning outcome data is the total score obtained from objective tests at the treatment's end. The test in question measures the level of retention, namely remembering the reality, theory, foundations and guidelines in the Learning Design course. The learning outcomes test consists of 40 items with a correct answer score for each item = 1. There is no reduction in score even if the student answers incorrectly or leaves the answer blank. Statistical data on student learning outcomes based on teaching talent with the highest score obtained by subjects with weak teaching talent being 31 and the lowest 5. The data also shows that the score obtained by subjects with strong teaching talent is 38 for the highest score, while 10 is the lowest score.

The test results of the Test of Between-Subjects Effects can be interpreted as main effect 2, namely for Teaching talent, has a statistical F value equal to 237.333 with a probability of $p<0.05$. Because the coefficient is significant for the second main effect, namely $p<0.05$, it can

be concluded that there is a difference in average learning outcomes between strong teaching talents and weak teaching talents possessed by students.

Different teaching talents result in different average learning outcomes. This difference is significant at $p<0.05$. The average learning outcome score for students with strong teaching talent was 73.01, higher than that for students with weak teaching talent of 58.08. Based on the t test, the difference in scores of 14.93 is significant at $p<0.05$. In further analysis, it can be seen that the effect size value produced by the Partial Eta Squared model for the teaching talent variable is very good, namely 0.440. Because the value is >0.26 as a critical value, the effect size of Teaching talent can be concluded as being in the large or strong category. Based on the results of the t test whose coefficient = -14.78, it can be interpreted that strong teaching talent significantly affects student learning outcomes with a significance value of $p <0.05$, and the resulting effect size value is 57.1%. The interpretation is that subjects with strong teaching talents have higher learning outcomes than those with weak teaching talents.

The effect of teaching aptitude on student learning outcomes results of hypothesis testing shows that differences in teaching aptitude affect student learning outcomes. The Ftes coefficient = 237.333 is significant at $p < 0.05$, and the effect size of 0.440 is considered vital. The difference in the effect of teaching talent is significant, both through parameter estimation where ttest=-14.788 is significant at $p<0.05$, or through pairwise comparisons where the mean difference is -7.417 and 7.417 is significant at $p<0.05$. Comparison between means shows that the average learning outcomes of strong teaching talents are higher than those of students with weak teaching talents. The difference is significant at <0.05. Based on the results of statistical data analysis, it is known that student teacher candidates with strong teaching talents have higher learning outcomes than student teacher candidates with weak teaching talents.

Although there are differences in learning outcomes between students who have strong teaching talents and weak teaching talents as one of the characteristics of the students studied, the characteristics of students regardless of their name are still strong in influencing student learning outcomes. This means that the theory of the influence of learner characteristics on learning outcomes is strong and consistent. This empirical fact is in line with the research opinion of (Ryboretskaya, 2021; Stainbank, 2022; Yuliansih et al., 2021), which states that there is a significant correlation between teaching talent and learning outcomes. (Nessipbayeva, 2019) differs that teaching talent also has a positive relationship with teaching competence. Research (Rino, 2011) states that the behavioral elements of the teacher's work and the talents possessed positively impact student learning acquisition with a participation rate of 21.9% on academic achievement.

Because the research was conducted on prospective teachers, the results of the research are in line with the research opinion of (Andewi & Waziana, 2019; Mei, 2021; Mutrofin et al., 2017; Sajan, 2010) showing a significant influence between teaching talent and exam results at undergraduate level. Also supports the opinion that teaching talent is the main determinant as well as being a significant predictor of the effectiveness of prospective teachers. Therefore, it is recommended that the teaching aptitude test be part of the educational entrance test for prospective teachers. The research results also support (Chugh, 2012) research opinion, which shows that there is a strong correlation between teaching aptitude and administrative achievement; and between mental ability scores and achievement scores. (Nessipbayeva, 2019) states that talent or aptitude has a very significant predictive value for learning achievement and employment. So, when accepting prospective teachers it is also very important to consider the strengths and weaknesses of prospective teachers in the field of teaching talent, not solely accepting prospective teachers based on academic talent as reflected by the results of administrative tests or their academic rankings while still in high school.

According to The Gallup Organization, theories about teaching talent are derived from and/or refer to theories about human talent (Rosson & Pennington Weeks, 2018). Based on the research results of The Gallup Organization which are widely published (Asplund et al., 2007) and (Rosson & Pennington Weeks, 2018), human talent is grouped into four categories, namely relating talent, impacting talent, striving talent, and thinking talent.

Relating talent

Effective talent-relating indicators generally create, construct, and maintain relationships (Gitonga, 2019). Talent indicators that are in line with this category, namely:

a. Communication, it is very easy to express what is thought using words or writing that are easy for others to understand. Examples of jobs that are in line with this talent indicator are teachers, sales assistants, public relations, presenters, and so on.

b. Empathy, being able to position oneself as another person so that they have the same feelings. Such professions that correspond to this talent indicator are teachers, sales assistants, HRD, nurses, telephone operators, psychiatrists, couriers and customer service.

c. Harmony, being able to work well with others and form relationships even with different thoughts. Examples of professions that correspond to this talent indicator are peacemaker, advisor, referee, negotiator.

d. Includer or Inclusiveness, easy to accept others and always try to group owned by everyone. Such professions that are in accordance with this talent indicator are group mobilizers, representatives of small group voices, leaders in groups with different cultural backgrounds, trainers for those who join the community.

e. Individualization, peeking at the privileges of each individual person. Such professions that correspond to this talent indicator are managers, counselors, employee selection, coordinators, educators, salespeople, prose writers, and civil servants.

f. Realtor, happy in close relationships with other people individually. A profession that is in line with this talent indicator is a stockbroker, an initiator in faith connections, who can be a role model in faith relationships.

g. Responsibility, being responsible for promises whether they are delivered or not. Examples of professions that align with this talent indicator are brokers, supervisors, finance, quality controllers, and security.

Impacting Talent

The topic of talent contained therein can inspire people to act, impacting talent moves individuals to take steps to be followed by individuals and groups and then make them act. Impacting talent indicators, namely:

a. Command, excessive responsibility and others see him as selfish. Examples of professions that fit this talent indicator are sales assistants, negotiators, journalists, lawyers, commanders, human resource development, and purchasing managers.

b. Competition, likes to estimate progress with other people and in competitions always tries his best. Such professions that are in line with this talent indicator are sales assistants, sports instructors.

c. Developers, get satisfaction from seeing each individual's progress. Examples of professions that fit this talent indicator are managers, educators, instructors, counselors and social practitioners.

d. Maximizer, making the best even better. An example of a profession that aligns with this talent indicator is the role in which he works to help excellent people become successful such as winning team instructors, managers, counselors, educators, and transformational leaders.

e. Positivity, having concern that is contagious and can make other people enthusiastic. According to (Salfina, 2022), university leaders' perceptions, job satisfaction, self-efficacy regarding performance, and always paying attention to the needs of their subordinates can improve quality. Examples of professions that fit this talent indicator are teachers/educators, artists, motivators, salespeople, managers and entrepreneurs.

f. Winning Others Over or a very high desire to gain recognition and work hard to get it. Such professions that are in line with this talent indicator are organizational ambassadors, receptionists, campaigners, telephone operators and sales assistants.

Striving Talent

The talent contained in it is used to support oneself to achieve results, striving talent inspires him to create something and then seek even better results (Brown et al., 2018). Indicators of striving talent, namely:

a. Achiever, has great abilities and always works hard, being busy brings life satisfaction and results. Such professions that are in line with this talent indicator are sales assistants, project technicians, field technicians, field workers, social workers, and SAR officers.

b. Activator, the thought becomes action. Examples of professions that are in line with this talent indicator are new businesses or those that require major changes, entrepreneurs, salespeople.

c. Adaptability, adapting and accepting every task received. Examples of professions that align with this talent indicator are journalists, production house manufacturers, nurses in emergency departments, customer service, firefighters, and dispatchers.

d. Belief, having unshakable life principles. Examples of professions that fit this talent indicator are customer service, administration, maintenance of goods, health workers, social workers, and volunteers.

e. Discipline, automatically forms organizations, systems and steps, they bind with regularity. Examples of professions that fit this talent indicator are accountants, secretaries, administrators, ISO officers, archivists, management information systems, and programmers.

f. Focus, determine direction and commitment to do it. Examples of professions that fit this talent indicator are project leaders, team leaders, and officers who require concentration.

g. Restorative, the capability to restore everything to its original function. professions that are in line with this talent indicator are physicians, corporate consultants, customer service, repair technicians, therapists, and business process reengineering.

h. Self Assurance has a life guide. Examples of professions that are in line with this talent indicator are leaders, salespeople, legal drafting, and entrepreneurs.

i. Significance, uniqueness in the eyes of others. Professions that are in line with this talent indicator are marketers, presenters, MCs, campaigners and salespeople.

Thinking Talent

The talent that is implied in it collaborates on techniques to collect, process, and produce decisions based on news or intellectual illustrations (Schlichter, 2023). Thinking talent indicators, namely:

a. Analytical, exploring the basis and factors. Examples of professions that fit this talent indicator are analysts, researchers, basic data managers, editors, risk managers, accountants and programmers.

b. Arranger, can organize but also have the flexibility to support the arrangement. Examples of professions that are in line with this talent indicator are supervisors, managers, event coordinators and developers.

c. Connectedness, having confidence in explaining factors spiritually. Such as professions that are in line with this talent indicator, namely counselors, leaders in forming teams of different groups or helping people feel useful.

d. Consistency or Fairness, has the ability to assess the similarity of people. Examples of professions that are in line with this talent indicator are judges, surveyors, commissioners, and figures who can have the energy to harmonize the rules of the game.

e. Context, learning from research and the past. Such professions that match this talent indicator are history educators, excavators, formulators of corporate customs, and judges.

f. Deliberative, conscientious, sometimes suspicious, careful in their steps. Examples of professions that are in line with this talent indicator are pilots, advisors or advisers. In particular it may be appropriate for official dealings, scoring good business contracts or ensuring compliance with regulations or also persons covered with financial and or security issues.

g. Futuristic, his vision can inspire. Such professions that are in line with this talent indicator are entrepreneurs, planners, visionaries, and new product developers.

h. Ideation, like deliberation and discussion. Such professions that align with this talent indicator are marketers, advertising specialists, directors, scriptwriters, designers and new product developers.

i. Input, desire to understand more deeply and always improve. Such professions that match this talent indicator are teachers, researchers, journalists, estimators, and archivists.

j. Intellection, likes research, likes exchanging intellectual opinions especially about philosophy. People with this talent are advised to consider starting or continuing their studies in philosophy, literature or psychology.

k. Learner, enjoys being challenged by learning opportunities. Examples of professions that fit this talent indicator are teachers, consultants, IT technicians, programmers or change catalysts.

l. Strategic, can understand the rhythm of life stories and data where problems arise in various rules. Like professions that are in tune with this talent indicator are strategic management planners, managers and leaders.

Based on this theory, there are at least three types of general aptitude and seven indicators that prospective teachers should have and are relevant to be factors or components of teaching aptitude, namely talent for building relationships (communication, empathy, and individualization); influencing talent (developer, maximizer, positivity); and learners. Supports that teachers must be able to teach to improve the teaching profession (Baoyun, 2022; Hou & Xue, 2023; Ryboretskaya, 2021). An in-depth study of this theory concluded that three indicators are most appropriate as factors or components of teaching talent for teacher positions in general: communication, empathy, and love of learning. According to (Salfina, 2022), a leader can establish good communication with his subordinates and make good plans. Although there are efforts on the part of educators to improve effective communication with students, ultimately the success of learning also depends on the characteristics of the students (Mahatmi, 2018). The other four indicators, namely individualization, builder, coach-player,

and cheerful, are more suitable for teachers, such as sports teachers, instructors or coaches at training institutions, and kindergarten teachers.

CONCLUSION

The results of this research lead us to conclude that there is a significant difference in the learning outcomes of students with strong teaching talents compared to the learning outcomes of students with weak teaching talents. The average value of the subject learning outcomes of the group of students who have strong teaching talents is greater than the average value of the subject learning outcomes of the group of students who have weak teaching talents. Teachers need to consider teaching talent among prospective teacher students when choosing learning methods. Because in the future student teachers will become teachers, their teaching talents must be strengthened. Strong teaching talent and high learning outcomes are initial indications that in the future student teachers will become quality teachers, which will improve the quality of education. It is also suggested to other researchers to develop other instruments to measure teaching talent with different factors or components and indicators so that many sets of instruments are obtained to measure the teaching talent of prospective teachers.

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