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## Components of the Pedagogical Diagnosis Process and Its Perception by Teachers of Regular and Inclusive Schools. Research Report (Part 1)

### KEYWORDS ABSTRACT

pedagogical diagnosis, components of diagnosis, diagnostic process, teacher as a diagnostician

The process of pedagogical diagnosis and its components is one of the most important elements of education because it determines, among other things, the quality of knowledge about the students – their problems and needs, and their individual circumstances in achieving goals. Making an accurate diagnosis by the teacher is a complex activity which requires a thorough collection of information, analysis, interpretation and inference, aimed at designing and implementing educational activities tailored to the cognitive abilities of each student.

The aim of the survey was to find out the opinions of teachers of regular and inclusive schools on the process of pedagogical diagnosis and its components and their selected determinants. The study used the method of diagnostic survey carried out with the use of a questionnaire. The questionnaire consisted of two parts. The first part included two open-ended questions about the understanding of the idea of diagnosis and therapy by the surveyed teachers. The second part consisted of closed (categorized) questions concerning various aspects of the process of pedagogical diagnosis and therapy. For the purpose of this article, only the responses from part two of the questionnaire related to the process of diagnosis and its components were analysed. The research presented here refers to the evaluations of the process of pedagogical diagnosis taking into account its most

important components emerging from the beliefs of the surveyed teachers of regular and inclusive schools working with children with special educational needs. In both study groups, important components of the diagnosis process were knowledge, practical skills, drawing conclusions based on available data, and seeing problem situations from different perspectives. At the same time, in the case of inclusive school teachers, statistically significant differences were found with reference to two components of the diagnosis process: teachers of particular subjects emphasized the importance of drawing conclusions on the basis of available data, while early school education teachers found viewing problem situations from different perspectives the most important components of the process.

## Introduction

The teacher gets to know the student through recognizing and evaluating his/her abilities and developmental needs. Diagnosis relies on many aspects such as: the choice of the right diagnostics tools, gathering and integrating information, processing and interpreting the results. "Each of these actions involves comprehension, deduction and interpretation processes". Pedagogical diagnosis is a broad process that is not limited only to checking and evaluating the condition of the student. It also explains the reasons behind that condition and predicts the student's achievements. In the process, the student's "past" (i.e. individual educational and upbringing history) is used to interpret his or her current achievements, whereas the "present time" is the basis for foreseeing future achievements (Foryś 2019:303). That is why, when reducing the child's deficits and developing his or her abilities, the teacher should implement solutions that will focus on individual support of the child's development according to his or her needs and abilities.

In connection with the above, the holistic approach to the competences of teachers' work requires that the teacher possesses an extensive knowledge in the field of teaching and other related areas, effective practical activities in the diagnostic, pragmatic and evaluation sense, personal moral awareness, personal qualities, and innate predispositions without which the work may lose its meaning, and contribute to the loss of what is essential (Zaorska 2012: 19). (Zaorska 2012: 19). Thanks to diagnostic and intervention competence, the teacher (Kyriacou 1991: 24) can look at the student from the perspective of their achievements. He can also look for the source of possible problems so that the right support and help could be offered. The elements of diagnostic competence are as follows (Strykowski 2005: 20-21): descriptive cognition (description of characteristics, behaviors and phenomena), genetic cognition (search for mechanisms, reasons and sources by gathering information on the child

and his or her parents or caretakers); theoretical knowledge regarding development, individual characteristics, and the environment of an individual; the ability to choose and use the right methods, technical and diagnostic tools. The quality of these components determines the success of every student. It is because early diagnosis of disorders makes it possible to undertake appropriate help and apply it at the right time in order to minimize failures and stressful situations experienced by the child (Czajkowska, Herda 1996).

Diagnosis is one of the most important elements of the educational process because it determines the quality of the implementation of the right intervention through effective ways of achieving the goal. It is the starting point for designing interventions that would serve as a type of control over the upbringing process and functioning of an individual, at the same time allowing for the evaluation of these interventions and their correction. (Machel 1994: 37). What should be noted is the fact that the whole process can be complicated, because during its course new aspects are often discovered and further diagnostic questions are asked (Stemplewska-Żakowicz 2008). That is why, diagnosis is an ongoing process that requires the teacher to be sensitive towards the student and his or her needs. It is the teacher's diagnostic abilities that determine the quality of the process of learning about the students and the reasons for their problems, as well as the proper selection of support activities.

## Method

The subject of this research included the components of the diagnostic process and their perception by teachers of regular and inclusive schools. The aim of the research was to find out the opinions of teachers in regular and inclusive schools on the components of the pedagogical diagnosis process and their selected determinants (position held, qualifications, and length of service). The research undertaken is a search for the components of pedagogical diagnosis based on the knowledge and skills of teachers working with students with special educational needs, within which the following research problems were formulated:

1. What components of the pedagogical diagnosis process are important in working with students with special educational needs according to the surveyed teachers of regular and inclusive schools?
2. Whether and to what extent are the beliefs of teachers in regular and inclusive schools about the components of the pedagogical diagnosis process in working with students with special educational needs determined by their position (early school education teacher, teacher of a subject)?

3. Whether and to what extent are the beliefs of teachers in regular and inclusive schools about the components of the pedagogical diagnosis process in working with a student with special educational needs determined by additional qualifications and length of service?

Due to the extensive analysis of the research results, they were presented in two parts. The first part, presented in this article, refers to the first and second research problem, while the article entitled: *Components of the Diagnostic Process and Their Perception by Teachers of Regular and Inclusive Schools. Research Report (Part 2)* presents the results of the research referring to the third research problem. The research used a diagnostic survey method in which the questionnaire technique was applied. The survey questionnaire consisted of two parts and a personal data form. The first part of the questionnaire consisted of two open questions about the respondent teachers' understanding of the concept of diagnosis and therapy.

The second part, on the other hand, included thirteen closed questions (categorized). Four of them dealt with various aspects of the process of pedagogical diagnosis and therapy, where the teachers surveyed were asked to indicate the degree of importance or difficulty by writing next to their chosen utterances: 1 – the most important, 2 – important, 3 – (very) important, or 1 – the most difficult, 2 – difficult, 3 – problematic. In turn, the remaining nine questions were related to the knowledge and skills in the diagnostic and therapeutic competences of the teachers surveyed, including their self-assessment.

The selection of teachers was random and followed by the consent of teachers of regular and inclusive schools to participate in the study. A total of 138 teachers from regular and 106 teachers from inclusive schools participated in the study. The teachers surveyed occupied different positions. The group of regular school teachers included 45.3% early school education teachers, and 54.7% teachers of particular subjects. Teachers of inclusive schools were teachers of first-third grades (32.6%), and teachers of particular subjects (67.4%).

Further factors differentiating the study group were additional qualifications and the length of service of the surveyed teachers. The related comparative analysis and its results are presented in the next article<sup>1</sup>.

The statistical analysis assumed a significance level of  $p < 0.05$ , understood as the probability of making a so-called error of the first kind, i.e. rejecting the true null hypothesis. A significance level of  $p < 0.05$  means that a 5% risk of making this error was considered acceptable (Rycielski, Brzezicka 2013). In the analysis of the collected

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1 The article entitled *Components of the Diagnostic Process and Their Perception by Teachers of Regular and Inclusive Schools. Research Report (Part 2)* was dedicated to the presentation of the beliefs of regular and inclusive school teachers on the components of the pedagogical diagnosis process in working with a student with special educational needs, taking into account additional qualifications and length of service.

material, a chi-squared test was used to check whether there is a statistical relationship between qualitative variables. For pairs of dichotomous variables, the chi-squared test with Yates correction was used. The analysis assumed the null hypothesis that there was no statistically significant dependence between the variables. A result below the accepted level of significance meant that it was possible to reject the null hypothesis and conclude that the variables were mutually dependent (Cyprianska, Bedyńska 2013).

## Results

The research presented here refers to evaluations of the pedagogical diagnostic process, including its most important components, by teachers in regular and integrated schools, and shows some dependencies emerging from the analysis of the data. The following are indications from the surveyed teachers of particular schools about the components of the pedagogical diagnostic process and how they perceive it from the perspective of their own experiences conditioned by the type of a given institution (Table 1).

Table 1. Components of the pedagogical diagnosis process as evaluated by teachers of regular and inclusive schools

Components of the diagnosis process		School				Test result
		regular		inclusive		
		n	%	n	%	
knowledge	not indicated	40	29,2%	43	41,0%	$\chi^2 = 3,142$ df = 1 p = 0,076
	indicated	97	70,8%	62	59,0%	
practical skills	not indicated	42	30,7%	23	21,9%	$\chi^2 = 1,894$ df = 1 p = 0,169
	indicated	95	69,3%	82	78,1%	
dynamism of action	not indicated	114	83,2%	95	90,5%	$\chi^2 = 2,083$ df = 1 p = 0,149
	indicated	23	16,8%	10	9,5%	
noticing dependencies among the data	not indicated	115	83,9%	93	88,6%	$\chi^2 = 0,707$ df = 1 p = 0,401
	indicated	22	16,1%	12	11,4%	
drawing conclusions based on available data	not indicated	91	66,4%	67	63,8%	$\chi^2 = 0,082$ df = 1 p = 0,774
	indicated	46	33,6%	38	36,2%	

Components of the diagnosis process		School				Test result
		regular		inclusive		
		n	%	n	%	
seeing problem situations from different perspectives	not indicated	91	66,4%	70	66,7%	$\chi^2 = 0,000$ df = 1 p = 1,000
	indicated	46	33,6%	35	33,3%	
predicting the results of one's decisions	not indicated	126	92,0%	94	89,5%	$\chi^2 = 0,185$ df = 1 p = 0,667
	indicated	11	8,0%	11	10,5%	
cooperation	not indicated	125	91,2%	87	82,9%	$\chi^2 = 0,018$ df = 1 p = 0,894
	indicated	12	8,8%	18	17,1%	
communication	not indicated	130	94,9%	97	92,4%	$\chi^2 = 3,114$ df = 1 p = 0,078
	indicated	7	5,1%	8	7,6%	

$\chi^2$  – statistics of the chi-squared test; df– degrees of freedom; p – importance

Source: the author's own research.

Teachers from regular and inclusive schools define the components of the pedagogical diagnosis process in a similar way. In the case of regular school teachers, the most frequently indicated components were: knowledge (70.8%), practical skills (69.3%), drawing conclusions based on available data (33.6%) and seeing problem situations from different perspectives (33.6%). The same components were also indicated by inclusive school teachers, but in a slightly different order: practical skills (78.1%), knowledge (59%), seeing problem situations from different perspectives (36.2%), and drawing conclusions from available data (33.6%). With regard to both the most frequently indicated components and other aspects studied, the results were distributed in a similar manner in the groups studied ( $p > 0.05$ ).

With regard to knowledge as a component of the diagnosis process, the test result ( $p > 0.05$ ) does not allow for the conclusion that there is a statistically significant dependence between the variables. In turn, 70.8% of teachers in regular schools and 59.0% of teachers in inclusive schools indicate knowledge as a component of the diagnostic process. In the group of teachers in regular schools, 69.3% indicate practical skills as a component of the diagnosis process. In the group of teachers in inclusive schools, 78.1 % indicate such skills as a component of the diagnosis process. Dynamism of action as a component of the diagnostic process is indicated by 16.8% of regular school teachers and 9.5% of inclusive school teachers. Among the teachers of

regular schools, 16.1% indicated perceiving the dependencies among the data as an important component of the diagnosis process. The percentage in the second group was 11.4%. More than a third of the surveyed teachers in regular schools (33.6%) and inclusive schools (36.2%) count drawing conclusions on the basis of available data as an important component of the diagnostic process. In contrast, 33.6% of teachers in regular schools and 33.3% of teachers in inclusive schools indicate seeing problem situations from different perspectives as a component of the diagnosis process. Also, 8% of teachers in regular schools and 10.5% of teachers in inclusive schools find predicting the consequences of one's decisions as an important component of the pedagogical diagnosis process. In contrast, the vast majority of teachers in regular schools (91.2%) and inclusive schools (82.9%) did not indicate collaboration as a component of the diagnosis process. Moreover, 5.1% of teachers in regular schools and 7.6% of teachers in inclusive schools indicate communication as a component of the diagnosis process. The test results ( $p > 0.05$ ) for the above components do not allow for the conclusion that there is a statistically significant dependency between the variables.

Further analysis focused on identifying the relationship between opinions on the most important components of the pedagogical diagnosis process and the job position occupied by the surveyed teachers (early school education teacher, teacher of a subject) of mainstream and inclusive schools (Table 2).

Table 2. Components of the pedagogical diagnosis process and the job position occupied by the surveyed regular and inclusive school teachers

Components of the diagnosis process		Early school teachers		Teachers of particular subjects		Test results
		n	%	n	%	
<b>Regular school</b>						
knowledge	not indicated	13	21,0%	27	36,0%	$\chi^2 = 3,019$ df = 1 p = 0,082
	indicated	49	79,0%	48	64,0%	
practical skills	not indicated	22	35,5%	20	26,7%	$\chi^2 = 0,861$ df = 1 p = 0,353
	indicated	40	64,5%	55	73,3%	
dynamism of action	not indicated	50	80,6%	64	85,3%	$\chi^2 = 0,251$ df = 1 p = 0,616
	indicated	12	19,4%	11	14,7%	
noticing dependencies among the data	not indicated	53	85,5%	62	82,7%	$\chi^2 = 0,045$ df = 1 p = 0,831
	indicated	9	14,5%	13	17,3%	

Components of the diagnosis process		Early school teachers		Teachers of particular subjects		Test results
		n	%	n	%	
drawing conclusions based on available data	not indicated	40	64,5%	51	68,0%	$\chi^2 = 0,062$ df = 1 p = 0,804
	indicated	22	35,5%	24	32,0%	
seeing problem situations from different perspectives	not indicated	41	66,1%	50	66,7%	$\chi^2 = 0,000$ df = 1 p = 1,000
	indicated	21	33,9%	25	33,3%	
predicting the results of one's decisions	not indicated	56	90,3%	70	93,3%	$\chi^2 = 0,109$ df = 1 p = 0,742
	indicated	6	9,7%	5	6,7%	
cooperation	not indicated	54	87,1%	71	94,7%	$\chi^2 = 1,579$ df = 1 p = 0,209
	indicated	8	12,9%	4	5,3%	
communication	not indicated	61	98,4%	69	92,0%	$\chi^2 = 1,69$ df = 1 p = 0,194
	indicated	1	1,6%	6	8,0%	
<b>Inclusive school</b>						
knowledge	not indicated	11	36,7%	28	45,2%	$\chi^2 = 0,3$ df = 1 p = 0,584
	indicated	19	63,3%	34	54,8%	
practical skills	not indicated	9	30,0%	14	22,6%	$\chi^2 = 0,264$ df = 1 p = 0,608
	indicated	21	70,0%	48	77,4%	
dynamism of action	not indicated	24	80,0%	58	93,5%	$\chi^2 = 2,56$ df = 1 p = 0,11
	indicated	6	20,0%	4	6,5%	
noticing dependencies among the data	not indicated	26	86,7%	55	88,7%	$\chi^2 = 0,000$ df = 1 p = 1,000
	indicated	4	13,3%	7	11,3%	
drawing conclusions based on available data	not indicated	25	83,3%	36	58,1%	$\chi^2 = 4,702$ df = 1 p = 0,03
	indicated	5	16,7%	26	41,9%	
seeing problem situations from different perspectives	not indicated	14	46,7%	46	74,2%	$\chi^2 = 5,594$ df = 1 p = 0,018
	indicated	16	53,3%	16	25,8%	



Components of the diagnosis process		Early school teachers		Teachers of particular subjects		Test results
		n	%	n	%	
predicting the results of one's decisions	not indicated	27	90,0%	56	90,3%	$\chi^2 = 0,000$ df = 1 p = 1,000
	indicated	3	10,0%	6	9,7%	
cooperation	not indicated	24	80,0%	52	83,9%	$\chi^2 = 0,027$ df = 1 p = 0,868
	indicated	6	20,0%	10	16,1%	
communication	not indicated	29	96,7%	56	90,3%	$\chi^2 = 0,431$ df = 1 p = 0,512
	indicated	1	3,3%	6	9,7%	

$\chi^2$  – statistics of the chi-squared test; df – degrees of freedom; p – importance

Source: the author's own research.

In the case of regular school teachers, there was no statistically significant relationship between the profession and the definition of the components of the pedagogical diagnosis process: statistically insignificant results ( $p > 0.05$ ) were recorded for all elements. The majority of early childhood education teachers (79.0%) and subject teachers (64.0%) indicate knowledge as an important component of the pedagogical diagnosis process. The majority of early school education teachers (79.0%) and teachers of particular subjects (64.0%) indicate knowledge as an important component of the pedagogical diagnosis process. Practical skills as a component of the diagnosis process are indicated by 64.5% of early school education teachers and 73.3% of subject teachers. Only 19.4% of early school education teachers and 14.7% of subject teachers, respectively, indicate action dynamism as an important component of the pedagogical diagnosis process. In turn, 14.5% of early school education teachers and 82.7% of subject teachers pointed to seeing dependencies among the available data. Also, 35.5% of early school teachers and 32.0% of subject teachers indicate drawing conclusions on the basis of available data as an important component of the diagnostic process. More than one third of early school education teachers (33.9%) and subject teachers (33.3%) indicate perceiving problem situations from different perspectives as an important component of the pedagogical diagnosis process. Predicting the consequences of one's decisions is listed as an important component of the pedagogical diagnosis process by 9.7% of early school education teachers and 6.7% of subject teachers. On the other hand, 12.9% of early school education teachers and 5.3% of subject teachers consider cooperation (in a team) to be an important component of the pedagogical

diagnostic process. In turn, communication as a component of the pedagogical diagnosis process was indicated by 1.6% of early school education teachers and 8% of teachers of particular subjects. In the case of teachers in inclusive schools, no statistically significant relationship was found between their profession and the components of the diagnosis process ( $p > 0.05$ ). Thus, 63.3% of early school education teachers and 54.8% of subject teachers indicate knowledge as a component of the pedagogical diagnosis process. In contrast, 70.0% of early school education teachers and 77.4% of subject teachers indicate practical skills as an important component of the pedagogical diagnosis process. On the other hand, dynamism of action as a component of the process of pedagogical diagnosis was indicated by 20.0% of early school education teachers and 6.5% of subject teachers, respectively. Among early school education teachers, 13.3% indicate perceiving dependencies among data as a component of the diagnostic process; in the other group the percentage was 11.3%. Predicting the consequences of one's decisions as a component of the pedagogical diagnosis process is perceived by 10% of early school education teachers and 9.7% of subject teachers. The majority of early school education teachers (80.0%) and subject teachers (83.9%) did not indicate cooperation as a component of the pedagogical diagnosis process. In contrast, only 3.3% of early school education teachers and 9.7% of subject teachers indicated communication as an important component of the diagnosis process.

Statistically significant results were reported for the two components of the pedagogical diagnosis process ( $p < 0.05$ ) in the group of inclusive school teachers. A statistically significant relationship was noted between the profession and the indication of drawing conclusions based on available data as a component of the diagnosis process. Among early school education teachers, 16.7% emphasized the importance of drawing conclusions based on available data as a component of the diagnosis process. The percentage among subject teachers was higher at 41.9%. A statistically significant relationship was also noted between the profession and the indication of seeing problem situations from different perspectives as a component of the diagnosis process. More than half (53.3%) of early school education teachers emphasized the role of perceiving problem situations from different perspectives as a component of the diagnosis process. This percentage was lower in the group of subject teachers at 25.8%.

## Conclusions

On the basis of the research carried out, conclusions were drawn which, due to the size of the group, are not subject to generalisation:

1. Teachers in regular and integrated schools have similar perceptions of the components of the pedagogical diagnosis process that are important in working

with students with special educational needs. In both surveyed groups, the most frequently indicated components were: knowledge, practical skills, drawing conclusions based on available data and seeing problem situations from different perspectives. For both the most frequently indicated components and the other aspects included in the survey, the results recorded were not statistically significant ( $p>0.05$ ).

2. In the case of regular school teachers, between the profession and the components of the pedagogical diagnosis process ( $p>0.05$ ) no relationship was found that would be statistically important in working with a student with special educational needs. On the other hand, statistically significant results were reported in the group of teachers of inclusive schools with regard to two components of the pedagogical diagnosis process ( $p<0.05$ ). First: a statistically significant relationship was noted between the profession and indications concerning drawing conclusions based on available data as a component of the diagnostic process, which was particularly significant for teachers of particular subjects. Second, a statistically important dependency was reported between the job and noticing the problem situation from various perspectives as a component of the diagnosis process, which was mainly emphasized by early school education teachers. With regard to the other components, no dependence on the teacher's position was found.

## Discussion of the results

The process of diagnosis consists not only of recording data, but also of processing and interpreting it, which requires the inclusion in the diagnosis process not only of perceiving and using the information obtained, but also thinking and concluding, i.e. reaching beyond the information provided (Wysocka 2013: 9). Moreover, the adaptation of the diagnostic process to the needs of the student should be preceded by the collection of the basic knowledge of the child's special developmental and educational needs and his/her communicative abilities (Borowicz 2017). That is, the diagnostic process consists of many components that are in mutual relationship and it is largely their quality that determines the accuracy of the diagnosis.

The surveyed teachers of regular and inclusive schools have similar perceptions of the components of the pedagogical diagnosis process that are important in working with a student with special educational needs. In both surveyed groups, the most frequently indicated components were: knowledge, practical skills, seeing problem situations from different perspectives, and drawing conclusions based on the available data. The way in which the surveyed teachers look at the process of pedagogical diagnosis fits

into a certain structure that is staged: from the teachers' perceptions of the problem to the inference and interpretation of the results of the diagnosis. In the case of inclusive school teachers, teachers of particular subjects emphasized the role of the ability to draw conclusions on the basis of the available data. Early school education teachers, on the other hand, mainly emphasized the importance and role of seeing problem situations from different perspectives. This approach to the pedagogical diagnosis process by the surveyed teachers indicates their professional skills and awareness of the importance of diagnosis in their work. Confirmation of this can be found in the research of J. Lipińska-Łokś (2018) who focused on the content analysis of the statements of teachers of inclusive schools, and pointed out that teachers strive for the continuous development and improvement of specific and non-specific competences, with particular attention to pragmatic competences, among which a particular place is occupied by, among others, diagnostic competences, where the acquisition and development of these competences by the surveyed teachers is treated as their lifestyle. In their research, I. Czaja-Chudyba and B. Muchacka (2016) noted that, among various competences (such as didactic competences 73%, upbringing competences 72%, and those including interpretation and communication ones 56%), only 30% of the surveyed teachers declared that they have diagnostic competences. In turn, the research presented by S. Śliwa (2017) shows a large discrepancy in the self-assessments of the knowledge and diagnostic skills of the surveyed teachers. Forty-seven percent of the respondents evaluated their knowledge in the area of psychopedagogical diagnostics as good/very good, while skills in this area were rated at a high level by 85% of the teachers.

The author's own research also verifies the results of the study conducted by A. Konieczna and I. Konieczna (2010) who, on the basis of the qualitative analysis of interviews, indicated the lack of professionalism of the surveyed teachers in the area of carrying out an initial diagnosis, but also the intuitiveness of the diagnostic activities undertaken. What concerned the authors of the study most was that the teachers did not recognize the problems of the students and their causes, or presented them in a general way, without trying to explain the situation of the student and his/her learning difficulties.

The knowledge and diagnostic skills available to the teacher-diagnostician determine the course of the diagnostic procedure and the quality of the diagnosis. Thus, it is worth emphasizing that the importance of diagnostic competence is highly significant for the quality of interpretation of the diagnostic data in further work with the student with special educational needs and in building the relationship between the person diagnosed and the diagnostician (Stemplewska-Żakowicz 2016, Wysocka 2013, Skalbani 2011). Therefore, the diagnostician, when planning and carrying out the diagnosis, must take special care of the value of the data obtained, so that ultimately it is possible to formulate accurate and reliable conclusions on the basis of

which it will be possible to help the person examined. Thus, diagnosis is a very complex task, involving broad knowledge and many different skills: theoretical and practical, methodological and communicative ones (Stemplewska-Zakowicz 2016). That is why, a teacher-diagnosticsian, in the age of rapid development of civilization and social changes, wishing to ensure good quality and effective work with each student, should continuously improve his/her work and increase his/her potential through constant learning, and critically look at his/her own competences in order to use the achievements of modernity to have the competences of tomorrow (Lemańska-Lewandowska 2009, Szempruch 2006, Karbowniczek 2003). Hence, it seems important that teacher education should be based on the two pillars of interdisciplinarity and innovation (Kutrowska 2016), as this will largely allow the teacher to become sensitive to the diverse problems and needs of all students.

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