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SAMEVATTING

DIE BETEKENIS VAN SKAAKSPEL TER VERBETERING VAN DIE KIND SE VERSTANDELIKE AKTUALISERING

deur

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In hierdie ondersoek word die moontlikheid dat skaakspel tot die optimale aktualisering van verstandelike moontlikhede kan bydra, ondersoek. Die leerling wat skoolstels onderpresteer word dikwels slegs van 'n onwilligheid teenoor skoolwerk beskuldig sonder dat daar enige sprake van vernuwing in didaktiese insette plaasvind. Die moontlikhede wat skaak as spel bied om as supplementêre hulpverleningsmetode die leerling metakognitief te stimuleer, is met die kognitiewe vereistes vir intelligensie-aktualisering, Wiskunde en Eerstetaal, vergelyk.

'n Empriese ondersoek is onderneem om te bepaal of die leerlinge wat op 'n relatief hoë vlak skaak speel, se intelligensiekwasiënt na verloop van tyd styg en terselfdertyd is hulle prestasies in Wiskunde en die Eerstetaal ook gemonitor. Tagtig skaakspelers wat hulle onderskeie skole in ligawedstryde verteenwoordig het, het die eksperimentele groep gevorm terwyl 'n kontrolegroep van tagtig nie-skaakspelers ook by die ondersoek betrek is. Ten einde die onafhanklike veranderlikes te beheer, is lede van die groepe op grond van ouderdom en aanvanklike totale IK-tellings wat so na moontlik aan mekaar was afgepaar.

Die Intermediêre vlak van die NSAGT-reeks is in die voor-toets gebruik om die IK van elke leerling te bepaal. Die gemiddelde totale IK van die twee groepe het in die voor-toets nie beduidend van mekaar verskil nie. In die na-toets is bevind dat die leerlinge wat skaak speel se gemiddelde totale intelligensiekwasiënt beduidend hoër op die 5% peil van betekenis getoets het.

Al die leerlinge se Wiskunde-punte is met die voor-toets IK resultate gekorrigeer. Daar is bevind dat skaakspelers en nie-skaakspelers se Wiskunde-punt in standerd 3, 4 en 5 nie beduidend verskil het nie, maar in standerd 6, 7 en 8 was skaakspelers se prestasie hoogsbeduidend hoër. Die skaakspelers het dus toenemend beter as die nie-skaakspelers presteer in Wiskunde.

Regressielijne is aan die Wiskunde-punte oor standerds gepas. Daar is bevind dat die helling vir die Wiskunde-punte van die skaakgroep $-1,8317$ was, teenoor die helling van $-3,016$ vir die kontrolegroep. Die skaakspelers se Wiskunde-punte het geleidelik in die hoër standerds afgeneem terwyl daar 'n drastiese afname in die Wiskunde-prestasie by die nie-skaakspelers ingetree het.

Ten opsigte van prestasies in die Eerstetaal is daar geen verskille tussen skaakspelers en nie-skaakspelers gevind nie.

Die verbetering in die IK-telling en die beter prestasie in Wiskunde by die eksperimentele groep, kan direk aan skaakspel toegeeskryf word. Deur skaakspel ontwikkel die kind bepaalde vaardighede soos konsentrasie en abstrakte en logiese denke wat belangrik vir toereikende leeraktualisering is.

Die kwantitatiewe en kwalitatiewe toename in intelligensie soos gemeet deur die Intelligensietoets en die prestasie in Wiskunde, dui op 'n effektiwêre differensiering van intelligensie en ook 'n verhoogde aktualisering van verstandelike vermoëns by die eksperimentele groep. Die gevolgtrekking word gemaak dat deelname aan skaak tot 'n verhoging van IK en 'n meer optimale aktualisering van die verstandelike moontlikhede kan bydra.

RÉSUMÉ

THE SIGNIFICANCE OF PLAYING CHESS IN IMPROVING A CHILD'S INTELLECTUAL ACTUALISATION

by

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This investigation deals with the possibility that chess can contribute to the optimal actualisation of intellectual potential. The pupil who underachieves scholastically is often accused of unwillingness to do schoolwork without the issue of renewing didactic input being considered. The possibilities inherent in chess as a supplementary method of renewing assistance by stimulating the pupil metacognitively, are compared with the requirements of intellectual actualisation, Mathematics and First Language.

An empirical investigation was undertaken to determine whether the intelligence quotient of pupils who play chess at a relatively high level improves in time. Their performances in Mathematics and First Language were also monitored. Eighty chess players who presented their respective schools in league matches formed the experimental group, while eighty non-chess players were involved in this investigation as a control group. To control the independent variables, members were divided on the basis of age and initial total IQ scores that resembled one another closely.

The intermediary level of the NSAGT series determined each pupil's IQ in the pre-test. The average total IQ of the two groups did not differ significantly. In the post-test it was found that pupils who played chess had an average total intelligence quotient significantly higher at the 5% level of significance. All pupils' Mathematics marks were corrected with the pre-test IQ results. It was found that the Mathematics marks of chess players did not differ significantly in Standards 3, 4 and 5, but in Standards 6, 7 and 8 the chess players' performance was considerably higher. The chess players therefore performed significantly better in Mathematics.

Regression lines were applied to Mathematics marks over standards. It was found that the gradient for the chess groups Mathematics marks was -1,8317 and the gradient for the control group -3,016. The chess players' Mathematics marks dropped gradually in the higher standards but there was a drastic deterioration in the non-chess players' mathematics marks. There were no differences with regard to the

achievements in the chess players' and non-chess players' First Language abilities.

The experimental group's improvement in IQ scores and performance in Mathematics can be attributed directly to chess. Through playing chess the child develops certain skills such as concentration, and abstract and logical thinking that are important for adequate learning actualisation.

The quantitative and qualitative improvement in intelligence as measured by the Intelligence test and performances in Mathematics indicate an effective differentiation of intelligence and also a heightened actualisation of intellectual abilities in the experimental group. The conclusion is reached that chess contributes to an improved IQ and the optimal actualisation of intellectual potential.